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The
World's Food

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FOREWORD

This volume of *THE ANNALS* constitutes the Proceedings of the Conference on The World's Food held by the Academy in Philadelphia on September 14 and 15, 1917. The Academy is obligated to many for assistance in arranging for this conference. Our appreciation is particularly due to the many governors, mayors and public officials who appointed delegates to the conference, for these delegates gave to the conference a seriousness of purpose that was felt by those who addressed the conference as well as by those who attended or participated in the discussions. We also gratefully acknowledge the assistance of the program committee. The following, among others, were particularly helpful in planning the program: Charles R. Van Hise, Chairman, Gifford Pinchot, Irving Fisher, Alonzo E. Taylor, Clarence Sears Kates, Harry Hayward, Samuel S. Fels, Mrs. N. D. Hitchcock and M. T. Phillips.

CLYDE L. KING, *Editor.*

THE HISTORY OF THE
CITY OF BOSTON
FROM THE FIRST SETTLEMENT
TO THE PRESENT TIME
BY
JOHN HUTCHINGS
OF THE BARRISTER AT LAW
IN THE COURT OF COMMONS
IN GREAT BRITAIN
AND
OF THE BARRISTER AT LAW
IN THE COURT OF COMMONS
IN GREAT BRITAIN
IN TWO VOLUMES
THE FIRST VOLUME
CONTAINING THE HISTORY
FROM THE FIRST SETTLEMENT
TO THE YEAR 1700
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1764

THE WORLD'S FOOD SUPPLY

By G. B. ROORBACH,

Assistant Professor of Geography, University of Pennsylvania.

The number of staple foods as distinguished from the luxuries that constitute the world's dietary are comparatively few. Many thousands of articles make up man's food, but a few form his chief dependence. Standing far at the head of the list are the grains—rice, wheat, millet, rye and barley. Whether measured by bulk of production, the food energy they contain, or the amount that enters international trade, these five grains, together with corn, oats and beans, are the chief food dependence of man. Sugar occupies a very high place as a food for nearly all peoples. Of the vegetables, the potato is exceedingly important, especially in the western world, but, although very great in bulk, its food value is much less than the grains and sugar. Fruits and nuts are of still less importance as staple articles of vegetable diet. Tea, coffee and cocoa are luxuries rather than vital elements in the world's food supply.

Meat, compared with vegetable products, stands surprisingly low in food value and in importance to most of the human race. Over one-half of the people of the earth eat very little meat. Only in new countries, where land is cheap, or in countries like those of western Europe where meats and animal fodder can be readily imported, are meat-producing animals so abundant that they are of large importance as a food. Even in this latter case, the consumption is small compared to countries like Argentina or the United States.¹ The world production of meat—beef, pork and mutton—is only one-fifth of the world's tonnage of wheat, and the food value less than any of the important grains, sugar or potatoes. If dairy products—milk, butter and cheese—are added to the meat products, the importance of animals as a source of food is much greater. The money value of dairy products in the United States, for example, is higher than the money value of the edible grains, and the energy value of these concentrated foods ranks high. With the

¹ See Figure 9, p. 28.

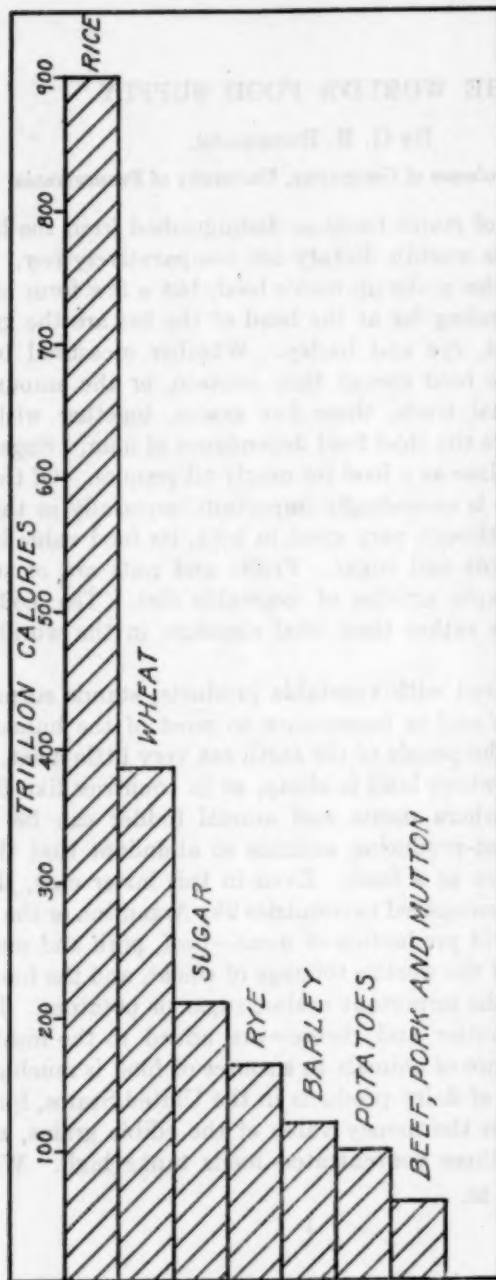


FIG. 1. TOTAL FOOD VALUE OF THE CHIEF WORLD FOODS EXPRESSED IN CALORIES.

RICE, WHEAT AND SUGAR ARE PRACTICALLY ALL CONSUMED AS HUMAN FOOD. SOME OF THE RYE AND BARLEY IS DISTILLED OR USED FOR MALT AND USED FOR ANIMAL FOOD. A CONSIDERABLE PART OF THE POTATO CROP IS USED FOR INDUSTRIAL PURPOSES.—DATA FROM G. K. HOLMES *The Food Situation in the United States*.

TABLE I

VALUE OF IMPORTS AND EXPORTS OF FOODSTUFFS AND ESTIMATED VALUE OF PRODUCTION FOR VARIOUS COUNTRIES¹

Figures are in millions of dollars

Country	Imports	Exports	Production	Per cent production to requirements
United Kingdom	1,239	200	1,162	53
Belgium	247	79	225	57
Germany	698	282	2,932	88
France	232	109	1,777	93
Austria-Hungary	144	115	1,814	98
United States	562	540	5,334	100
Russia	102	452	3,986	110
Canada	72	204	710	123
Argentina	17	169	469	148

exception, however, of a few localities, animal foods are of very much less importance than vegetables.

The bulk of the world's food supply is produced in the countries in which it is consumed. Large as is the international trade in food products, it represents but a small proportion of the food grown and consumed at home. The United Kingdom and Belgium, which are usually mentioned as the countries dependent for food upon the outside world, are exceptions to the rule. Even these countries produced in the pre-war period 53 per cent and 57 per cent respectively of their own requirements.² Germany, according to the same estimates, supplied 88 per cent of her requirements, and France 93 per cent. Sparsely populated Argentina, which we think of as primarily a food exporting nation, actually consumes nearly twice as much as she exports. The United States produces more than ten times the value of her exports and, most surprising of all, food importations into the United States, measured in dollars, are slightly greater than food exportations. In other words, the United States is scarcely able to pay for imported foods with what is exported. When we balance accounts we find our soils are supporting only our own population. Russia, which

²Data from N. C. Murray and F. Andrews: *Food Production and Requirements of Various Countries*. Farmers' Bulletin, No. 641, U. S. Dept. of Agriculture.

¹*Ibid.*

we think of as a great food surplus country, has a paltry 10 per cent surplus left for exportation after her own requirements are satisfied. As far as the staple foods that satisfy the hunger of mankind are concerned, the world's table is set with products grown near at home.

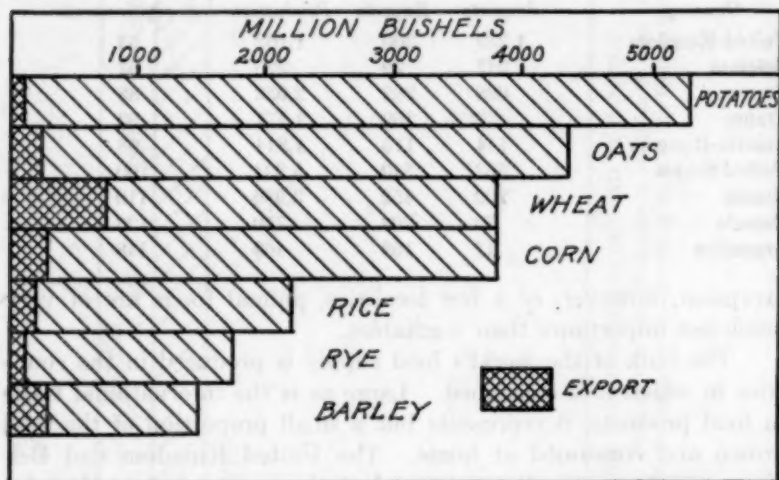


FIG. 2. WORLD PRODUCTION OF GRAINS AND POTATOES IN BUSHELS 1911-13 AVERAGE.

THE HEAVIER SHADED AREA INDICATES THE PART OF PRODUCTION THAT ENTERS INTERNATIONAL TRADE. CHINA IS NOT INCLUDED.

Although the grains are by far the most important foods that enter world trade, only a small proportion of the crops produced goes beyond the borders of the countries in which they were grown. Figure 2 shows that wheat and barley only have any considerable percentage of export as compared with total production, amounting to about 20 per cent in each case. The proportions of vegetables exported are insignificant when compared with production.

SOURCES OF WORLD FOOD

The principal food producing countries, as well as the consuming countries, are in the temperate zones. The tropics, containing one-third of the land area of the globe, are barely able to support one-third of the world population. The north temperate zone, comprising nearly one-half of the land area, contains almost two-thirds

of the population. If we except coffee, cacao, and about one-half of the world's tea—luxuries rather than foods—only two crops of large importance for the outside world are supplied by the tropics: rice and sugar. In the case of rice, some of the largest producing countries, China, Japan, Italy and the United States, are in the temperate zone and the cane sugar of the tropics makes up only a little over half of the total sugar production. Tropic fruits, especially the banana, are important food exports in a few favored localities. But aside from these three crops, the tropics are not producing any important food surpluses for a hungry world. The wonderful food producing ability of the tropics is potential, not developed. They may be the producers of the food surplus of the future, but they are not important sources today.

Many tropical countries are not feeding themselves, but are dependent upon the temperate zone. Brazil, for example, is a large importer of wheat; Cuba is one of the largest meat importing countries. Even rice in large quantities is imported for consumption into Java, the Philippines, the Straits Settlements and the American tropics. India is one of the largest sugar importing countries. The only sections of the tropics that today are at all important in supplying food products are: (1) Indo-China, Siam and Burma, which are all exporters of rice. Most of this crop goes to other tropical countries, however, and in these days of few ships the great distance of these lands from Europe and America is a serious handicap to fully utilizing these supplies; (2) Java, Cuba, Porto Rico and other West Indian Islands, Hawaii and some other tropical lands which supply most of the cane sugar of exports; (3) West Indies and Central America, which send much fruit, especially bananas, to the temperate zones. The shortage of food has stimulated production in the tropics, especially of sugar, to a certain extent, but a rapid extension of agriculture, at all commensurate with the present needs, is impossible. The task is one requiring a period generations long, not years long, and is dependent upon the whole big question of making the tropics habitable and efficient; not one to be solved to meet the emergencies of a world war.

It is in the north temperate zone that we find not only the greatest food needs but also the largest production of today. Measured by production two of the most important agricultural regions of the world are eastern China and Japan, and central and west-

ern Europe. The first of these two regions practically supports its own enormous population; the second region, in spite of its enormous production, needs to import the deficiency in the supplies and this import comes largely from other, but less densely inhabited, sections of the north temperate zone, chiefly the United States, Canada and Russia, and from the sparsely settled lands of the south temperate zone, chiefly Argentine and Australasia. The wheat exporting section of India also lies north of the Tropic of Cancer.

The south temperate zone, containing a land area only one-third larger than the United States and with a total population of but 20,000,000 people, can produce the kind of food demanded by the people of the north temperate zone. Argentina and Uruguay, Australasia and South Africa are suited by climate and soil to produce grains and animals, and with a small population to consume them, they are food exporting nations. In addition to the small land area of the south temperate zone there are several serious handicaps to large food production in this zone: (1) much of the already restricted area is desert; (2) the climate of the more arable areas is a most undependable one, shortages, or even complete failures, of crops in Argentina and Australia being very frequent; (3) they are far from the markets and the bulky grains and meats require a tonnage that the world in this time of war can scarcely spare to bring them to the shores of Europe. The undependableness of Argentina's climate is indicated most forcefully by the great draught of last year, which, in the world's supreme hour of need, made that country almost worthless as a supplier of wheat and corn. Even to a greater degree does Australia's production of grain vary through wide margins with its exceedingly capricious rainfall.

THE WORLD'S GRAIN SUPPLY

Wheat. Wheat and rice are rivals as sources of human food. Rice, however, while it feeds many millions of people, is consumed almost entirely where it is produced. Wheat is the great staple food export. Corn, which equals wheat in production, is largely used for animal food and enters world commerce only to a slight extent. Of the world production of 3,823 million bushels of wheat (not including China), considerably over half is grown in Europe. Russia in the three years' average preceding the war led the world

in production, and although that country consumed five-sixths of what was produced, enough was left for export to make Russia the leading source of supply for western Europe. Roumania, also, although producing but 88,000,000 bushels, had an export surplus of 54,000,000 bushels, nearly half of Russia's export. Bulgaria had a 12,000,000 bushel surplus for export. Germany, although an exporter of wheat, imported three times her export and therefore cannot be regarded as a wheat surplus country. The large production of wheat in Austria-Hungary was practically all consumed at home. Of the other European countries, France, Italy, Germany, Spain and the United Kingdom are all large producers, but production is less than needs. Holland, Belgium, Switzerland and the Scandanavian countries largely depend upon importations for wheat. Four countries, United Kingdom, Germany, Italy and France, took 60 per cent of the world's imported wheat, the United Kingdom alone importing 221,000,000 bushels on the average each year, or 30 per cent of the total world importation. Brazil, with a wheat importation of 23,000,000 bushels, is the only country outside of Europe with any considerable wheat import. The supply of wheat for the importations into Europe, aside from what comes from Russia and Roumania, is supplied principally by the United States, Canada, Argentina, India and Australia. These seven countries furnish 94 per cent of the world export of wheat.

Such were the conditions before the war. What is the state of the world wheat this year?

Russian wheat is shut off from the outside world by the closing of the Bosphorus, and hence the surplus this country contributed to the world is not available. The wheat of the Balkans and of Turkey, as well as of most of Roumania, is to be added to the supplies of the Central Powers. There is no means of knowing the actual conditions of the wheat crop of Germany and Austria-Hungary this year. The average production (1911-1913), export and import of the countries now occupied by the Central Powers, in millions of bushels are shown in Table II. By including Roumania, Poland and Belgium we see that before the war the lands now in control of the Central Powers had a wheat deficit of 54,000,000 bushels. If we include Turkey—both Asiatic and European—with the other Balkan States, we would add to production about 55,000,000 bushels. Considerable of this was available for

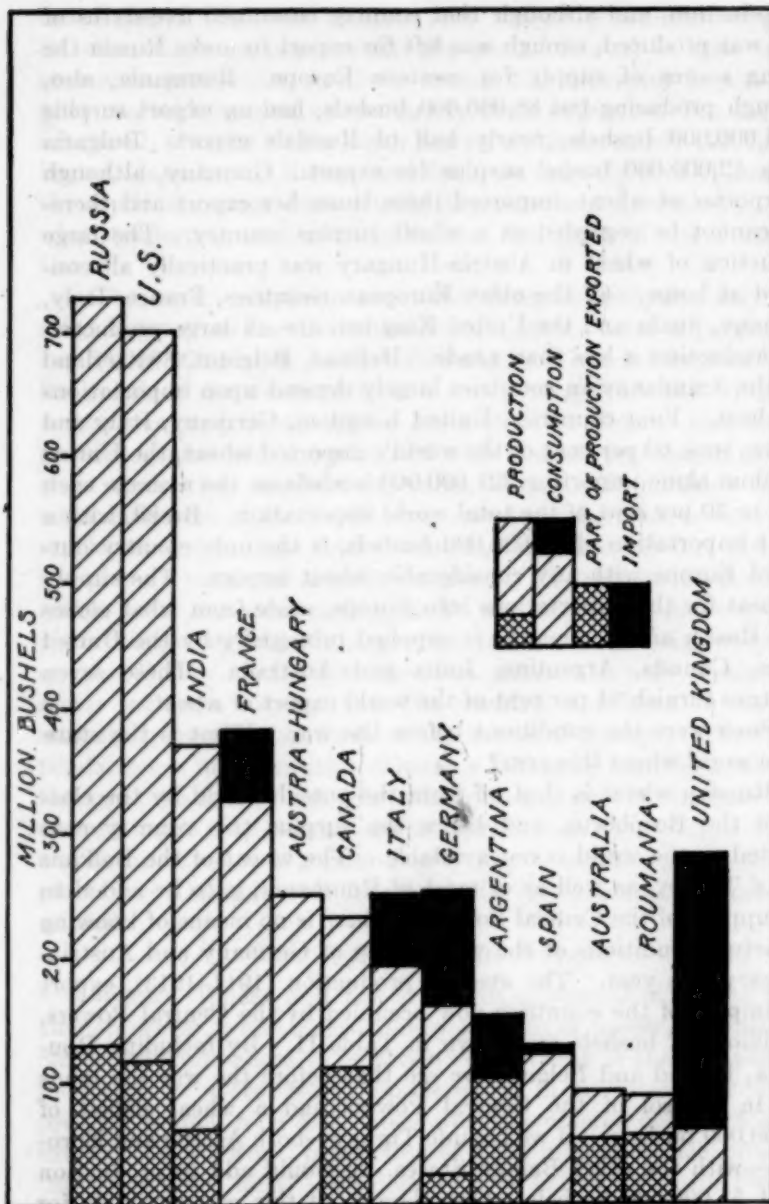


FIG. 3. WHEAT PRODUCTION, EXPORT AND IMPORT OF THE LEADING PRODUCING COUNTRIES, 1911-13 AVERAGE. THE TWO LIGHTER SHADINGS COMBINED SHOW PRODUCTION OF WHICH THERE WAS EXPORTED THE AMOUNT INDICATED BY THE CROSS LINES. THE SOLID BLACK INDICATES IMPORTATIONS. HENCE THE COMBINED LIGHT AND BLACK AREAS SHOW WHEAT CONSUMPTION.

TABLE II
WHEAT PRODUCTION, EXPORT AND IMPORT OF LEADING COUNTRIES⁴
1911-1913 averages

<i>Countries in Control of Central Powers</i>	<i>Production</i>	<i>Export</i>	<i>Import</i>
Germany	160	23	91
Austria Hungary	247	1	..
Bulgaria	46	12	..
Roumania	88	54	..
Belgium	15	21	74
Poland (1912-1914)	18	..	..
Total—Central Powers	574	111	165
<i>Neutral European Countries</i>			
Holland	5	54	78
Sweden	8	..	7
Norway	3	..	5
Switzerland	3	..	20
Spain	123	..	4
Denmark (1913 only)	4	..	7
Total—Neutrals	143.3	54	121
<i>Western Allies</i>			
United Kingdom	61	..	221
France	324	..	55
Italy	191	..	59
Portugal	8	..	2
Greece	7	..	7
Total—Allies	591	..	344
<i>Other Countries</i>			
Russia	727	128	..
United States	705	116	..
India	370	60	..
Canada	229	111	..
Argentina	156	101	..
Australia	89	52	..
Algeria	33	5.5	..
Tunis	6	1	..
British South Africa	6	..	6
Egypt	33	..	..
Brazil	..	..	23
Japan	26	..	3
Total—World	3,823	767	723

⁴In millions of bushels. Flour is reduced to wheat equivalent. The blank spaces indicate no import or export, or only small amounts. Data for this, and the other tables, have been taken from the Year Books of the United States Department of Agriculture and from Statistical Notes on Production, etc., of Cereals, published by the International Institute of Agriculture, Rome.

export, and possibly would be capable of materially reducing the Central Powers' deficit at the present time. The neutral nations bordering the Central Powers are all wheat importing nations, and presumably can be of little or no aid in supplying this grain. But unless the Central Powers have been able materially to increase wheat production in the face of increased consumption in the army, lack of skilled man power for the farms, shortage of fertilizer and actual destruction by the acts of war, the supply must be short of actual demands.

With the exception of Spain, the neutral countries, largely for climatic reasons, are small producers and therefore largely depend on importations. Neutral imports exceeded neutral exports by 67,000,000 bushels in the average for the period 1911-1913.

The western allies were, in spite of large wheat production, the chief importers. With a total production of 591,000,000 bushels, there is practically no export, and 344,000,000 bushels of import to supply the needs. The wheat importations necessary therefore to supply the deficit of the European countries, excluding Russia, before the war, were 465,000,000 bushels of which the neutral nations and the western allies required 411,000,000 bushels. How can this shortage for the neutral nations and the allies be met?

The wheat production of the western allies will this year fall far below the normal pre-war production. France, whose average production in 1911-1913 was 324,000,000 bushels will produce this year but one-half this crop—162,000,000 bushels.⁵ On the basis of pre-war conditions France would require therefore an importation of 182,000,000 bushels. The wheat crop of Italy is below the pre-war average, and it is estimated that Italy's deficit will amount to 73,000,000 as compared to 59,000,000 bushels for 1911-1913. The wheat crop in the United Kingdom is reported in excellent condition, but an importation of over 200,000,000 bushels may be required to fully meet the needs. This gives a total deficiency of over 457,000,000 bushels of wheat for the three western allies. To this must be added the needs of Greece and Portugal (9,000,000 bushels before the war) and the neutral countries which, as we have seen, in the pre-war period amounted to 67,000,000 bushels.

Can the wheat exporting nations meet this western European

⁵ Estimate of International Institute of Agriculture as given in monthly Crop Report, United States Department of Agriculture, August, 1915.

deficiency of over 524,000,000 bushels? Of the five countries that usually have a large available surplus of wheat—United States, Canada, Argentina, India and Australia—one, Argentina, has practically no surplus, the 1916-1917 crop being practically a failure. Canada will probably have a surplus of 120,000,000 bushels, and Australia 50,000,000. This gives a total of 328,000,000 bushels. To this may be added several million bushels of surplus from North Africa (Algeria and Tunis). But on the other hand South Africa, Brazil and Japan are in normal years additional wheat importing countries. It would seem, therefore, that the 1917 wheat supply would fall at least 200,000,000 bushels short of the normal demand, and will probably be over 300,000,000 bushels.

Corn. Corn rivals wheat in quantity produced, but its importance as a food supply is very much less. This is due to the fact that the merits of corn as a human food are not fully appreciated by a large proportion of the human race, its cultivation is less capable of extension due to climatic limitations, and much of the crop is used for feeding animals. In the years 1911-1913, the United States produced 2,700,000,000 bushels of corn, against 3,800,000,000 bushels for the world production. This was over 71 per cent of the world crop. Most of this great yield was consumed at home by cattle and swine, only 48,000,000 bushels ($1\frac{1}{4}$ per cent) being exported. Argentina, the second country in production, produced in the same period 252,000,000 bushels, of which half (128,000,000 bushels) was exported. The only other countries in which corn production exceeded 100,000,000 bushels were Austria-Hungary, Roumania and Italy. India, Russia, Egypt, South Africa and Bulgaria are lesser producers. Since the United States crop for 1917 promises to surpass all previous records, the estimate being 3,248,000,000 bushels, an increase of 700,000,000 bushels over the 1916 crop, the almost total failure of the Argentine crop is more than compensated. Since the corn crop of Italy also promises well for this season, the surplus corn may help in the conservation of our wheat. The corn crop of the United States for this year will be greater than the total world production previous to 1905.

Rye and Barley. As a source of food in many countries of Europe, notably Russia and Germany, rye is a more important food supply than wheat. Barley is also of very great importance, although a considerable part of this crop has been used in the manu-

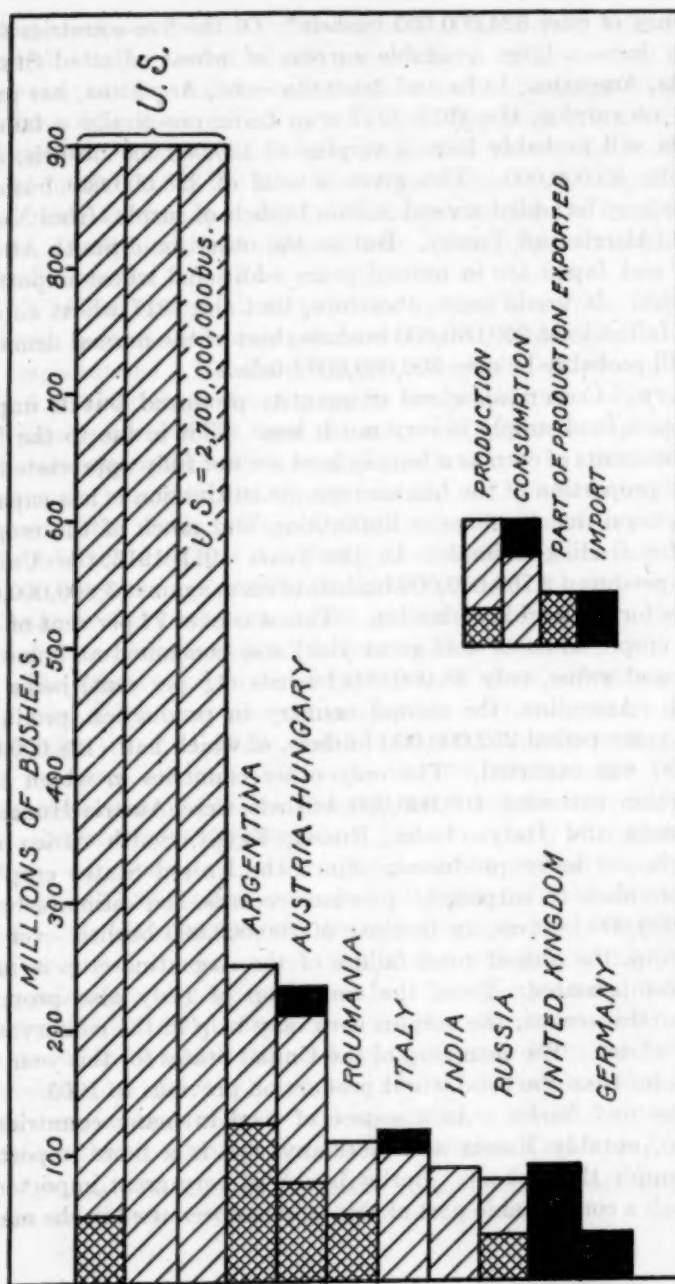


FIG. 4. LEADING COUNTRIES IN PRODUCTION, EXPORT AND IMPORT OF CORN, 1911-13, IN ORDER OF PRODUCTION.

facture of malt. Over one-half of the world's rye and one-third of the world's barley are grown in Russia. Of the 1,783,000,000 bushels of rye produced in 1911-1913, the countries now occupied by the Central Powers produced 655,000,000 bushels, about 37 per cent of world production. These countries had a slight surplus for export, about 29,000,000 bushels above imports. For barley, the Central Powers were much more dependent upon the outside world. They imported, in addition to a production of 353,000,000 bushels, equivalent to one-fourth of the world production, 175,000,000 bushels, against an export of 41,000,000 bushels. Germany especially was a heavy importer of barley.

TABLE III
PRODUCTION, IMPORT AND EXPORT OF RYE
Millions of bushels. 1911-1913 averages

	<i>Production</i>	<i>Export</i>	<i>Import</i>
<i>Central Powers</i>			
Germany	455	45	16
Austria-Hungary	163	1	1.5
Bulgaria	10	2.3	..
Roumania	4	3	..
Belgium	23	1	6
	<hr/>	<hr/>	<hr/>
Total—Central Powers	655	52.3	23.5
<i>Neutral Countries</i>			
Spain	25	..	..
Sweden	23	..	4
Denmark	18	..	8
Holland	16	19	31
Norway	1	..	10
Switzerland	1.7	..	.7
	<hr/>	<hr/>	<hr/>
Total—Neutrals	84.7	19	53.7
<i>Western Allies</i>			
United Kingdom	1.6	..	2
France	48	..	3
Italy	5	..	.6
	<hr/>	<hr/>	<hr/>
Total—Allies	54.6	..	5.6
<i>Other Countries</i>			
Russia	935	35	8
United States	37	1	..
Canada	2.4	..	..
	<hr/>	<hr/>	<hr/>
Total—World	1,783	107	107

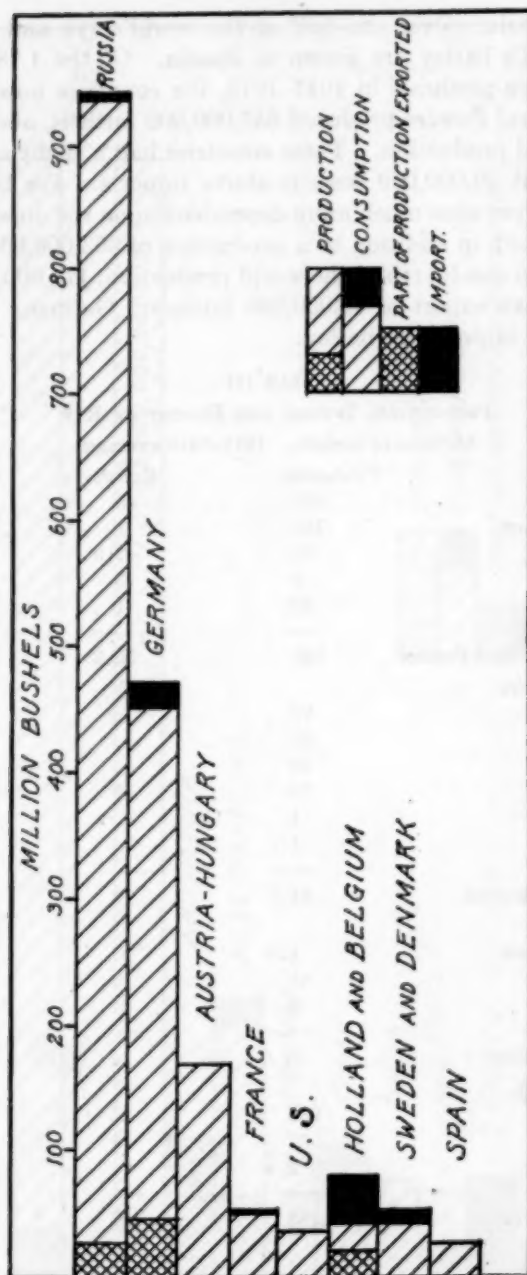


FIG. 5. PRODUCTION, EXPORT AND IMPORT OF RYE IN LEADING PRODUCING COUNTRIES, 1911-13.

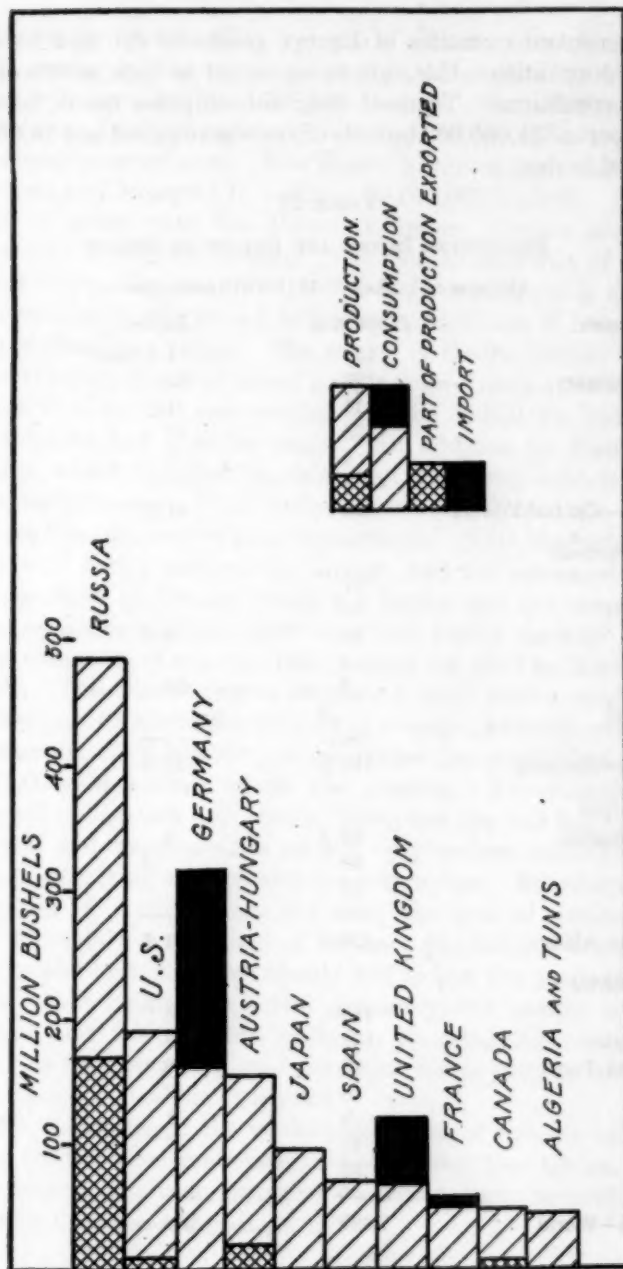


FIG. 6. PRODUCTION, EXPORT AND IMPORT OF BARLEY IN THE TEN LEADING COUNTRIES IN PRODUCTION, 1911-13.

The neutral countries of Europe produced rye and barley in important quantities, this crop being suited to their severe climate and soil conditions. To meet their consumption needs, however, a net import of 34,000,000 bushels of rye was required and 18,000,000 bushels of barley.

TABLE IV
PRODUCTION, IMPORT AND EXPORT OF BARLEY
Millions of bushels. 1911-1913 averages

<i>Central Powers</i>	<i>Production</i>	<i>Export</i>	<i>Import</i>
Germany	158	1.2 (malt)	154
Austria-Hungary	153	18	.8
Bulgaria	11	1	..
Roumania	25	17	..
Belgium	4	4	20
Total—Central Powers	353	41.2	174.8
<i>Neutral Countries</i>			
Spain	67	..	..
Sweden	14	..	..
Denmark	23	3.5	2.1
Norway	3	..	4
Holland	3	30	41
Switzerland	.5	..	4.5
Total—Neutrals	110.5	33.5	51.6
<i>Western Allies</i>			
United Kingdom	62.5	1	52
France	48	.5	7
Italy	10	..	.8
Total—Allies	120.5	1.5	59.8
<i>Other Countries</i>			
Russia	485	168	..
United States	187	8	..
Algeria and Tunis	45	8	..
India	38	17	..
Argentina	5	1	(malt) 1.3
Canada	47	7	..
Japan	93	..	..
Total—World	1,489	294	290

Among the western allies, rye was of little importance as a food product, except in France, whose production of 48,000,000 bushels supplied her needs within 3,000,000 bushels. Very little rye was imported into England and Italy. Barley, on the other hand, was of considerable importance. The United Kingdom grew more barley than wheat and imported in addition 52,000,000 bushels. The net imports of barley into the United Kingdom, France and Italy amounted to 58,000,000 bushels. The neutral countries of Europe and the western allies, therefore, before the war required in addition to their production of rye and barley an importation of 116,000,000 bushels of these two grains. The supply of the 40,000,000 bushels of rye in this deficit was obtained largely from Russia and Germany—sources that are not now available. The 76,000,000 bushels of barley imports had a wider source. In addition to Russia and Roumania, which supplied 60 per cent of the barley exports before the war, barley exports from India, Algeria and Tunis, the United States and Canada, were of some importance. With the restrictions of the use of barley and rye for liquors, and the increased use of flour from these grains for bread, the barley and rye crops have assumed an increased importance as a food during the war.

The estimates of rye and barley crops for 1917 in Europe are favorable. The United States estimates^a place barley production 17,000,000 bushels above the 1911-1913 average, while an estimated rye production of 56,000,000 bushels makes the production of this grain 19,000,000 bushels above the average. Nevertheless, the shutting off of Russian and central European rye and barley from the neutral and western allies adds a very serious burden to the problem of supplying Europe with grain this year. Based upon the consumption of grains before the war, the neutral nations and western allies face a shortage of at least 640,000,000 bushels of wheat, rye and barley. If we should add to this the needs in corn, oats and other grains, the cereal deficiency will mount up into figures well over 1,000,000,000 bushels. The staggering burden of meeting this deficiency is placed upon the cereal surplus countries of the Americas, Asia and Australia.

Rice. Estimates of the world production of rice are less reliable than for the other grain crops for the reason that China, probably the largest producer, furnishes no data for any accurate esti-

^a Monthly Crop Report, September, 1917.

mate. The estimate of 2,200,000,000 bushels of cleaned rice for 1910 for all countries except China, is based upon the data given in recent Year Books of the Department of Agriculture and Statistical Notes of the International Institute of Agriculture.⁷ The production of three of the eighteen provinces of China is given in 1910 at nearly 800,000,000 bushels.⁸ The importance of rice as a food is even greater than its quantity of production would indicate. Judged by food value, rice far exceeds its nearest competitor. A sixty pound bushel of wheat has three-fourths of the food value of a sixty pound bushel of cleaned rice. Even more than wheat, rice is consumed in the countries where it is grown. As shown in Table V, of the 200,000,000 bushels that enter international trade, the largest proportion is a transference of rice from one tropic country to another or to the rice producing countries of China and Japan.

TABLE V
RICE PRODUCTION, EXPORT AND IMPORT
Millions of bushels. 1911-1913 averages

	<i>Production</i>	<i>Export</i>	<i>Import</i>
World	2,200 (excluding China)	210	191
India and Ceylon	1,091.7	100	19
Japan (Empire)	341	....	20
Java	133	2.2	18.5
French Indo-China	83.3	32	....
Siam	54	30	....
Philippines	19	....	7
United States	12	....	4
Italy	11	....	....
China	(no data)	....	10
Singapore and Straits	(no data)	18	36
Russia	6	....	4.5
Germany	....	6.6	17.5
Holland	....	8.5	14
United Kingdom	....	....	12
Belgium	....	1.6	3
France	....	1	8.1
Egypt	8.3	....	2
Cuba	....	....	4.6

⁷ Statistical Notes on the Production, Imports and Exports, Prices and Maritime Freights of Cereals. Rome: International Institute of Agriculture. Published twice yearly.

⁸ Year Book, Dept. of Agriculture, 1916, p. 608.

Only a small proportion of the rice surplus normally goes to European countries—not much over one-third.

Of the western countries Italy and the United States are the only countries in which the growing of rice has become an important industry. From 1911–1913 the average production in the United States was 12,000,000 bushels of cleaned rice, as compared to 11,000,000 bushels for Italy. The possibilities of future extension in the United States of this, the most important of all food crops, are almost unlimited. Since its production requires much outlay of time and capital in equipping for irrigation, it cannot be depended upon to a large extent as an emergency crop for meeting shortages in other grains during the war. The 1917 estimate of rice production in the United States, however, is given at 32,200,000 bushels.⁹

Beans. A food crop of great importance in the far east, beans are of relatively small importance in the west, when compared with the grains. Of the countries for which we have statistics, India, with 125,000,000 bushels, is the most important; Italy, with 23,000,000 bushels; Japan, with 21,000,000 bushels; Austria-Hungary, with 19,000,000 bushels; Russia, with 12,000,000; Spain and the United States, each with 11,500,000 were the most important producers before the war. The introduction of the soy bean from China and Japan into the western world met the need of a seed-crop of large yielding possibilities. Since the soy bean, because of its large content of oil and proteids, can be a substitute for meat, this crop is becoming an increasingly important one. The production of beans this year in the United States and especially of the soy bean in the southern states, will be far in excess of any previous year, and should be an important addition to our food supply.

Potatoes. The potato crop of the world, measured by its bulk, is one of the most important of our food crops. Nearly 68 per cent of this enormous crop is produced in Germany, Russia and Austria-Hungary. Very little, however, enters international trade. The crop is consumed at home. Only 75,000,000 bushels out of the 5,313,000,000 total entered foreign trade and this for the most part was across the frontiers of Germany. A very large part of the potato crop is used for industrial purposes. This, combined with the low food value of a bushel of potatoes as compared to a bushel of grain, puts the food value of the potato crop lower than

⁹ Monthly Crop Report, September, 1917.

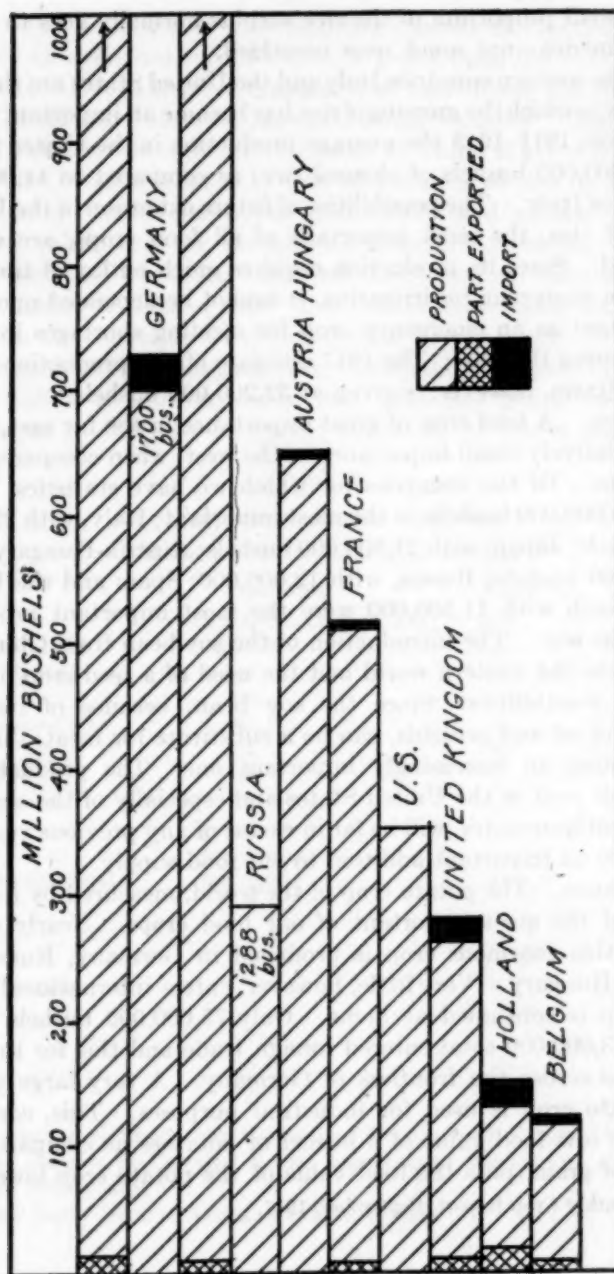


FIG. 7. PRODUCTION, EXPORT AND IMPORT OF POTATOES IN EIGHT LEADING COUNTRIES, 1911-13 AVERAGE.

any of the grains or sugar as far as its total value to the world is concerned. Its importance to the potato-growing nations of Europe, however, should not be underestimated. Germany, the largest producer before the war, was also the largest importer. The net import into Germany—17,000,000 bushels—was over three times as large as the net imports of Great Britain—5,100,000 bushels. Before the war the western allies, with the exception of the United Kingdom, and the neutral countries except Switzerland, were either exporting potatoes or fully meeting their own needs. The 1917 prospects

TABLE VI

PRODUCTION, EXPORT AND IMPORT OF POTATOES

Millions of bushels. 1911-1913 averages

<i>Central Powers</i>	<i>Production</i>	<i>Export</i>	<i>Import</i>
Germany	1,699	12	29
Austria-Hungary	642	1.3	4
Roumania	3	....	....
Belgium	113	9	6
Total—Central Powers	2,457	22.3	39
<i>Neutrals</i>			
Holland	128	16	2
Sweden	66	....	....
Denmark	36	1	....
Norway	27	....	....
Switzerland	42	....	3.2
Spain	92	1.8	....
Total—Neutrals	391	18.8	5.2
<i>Western Allies</i>			
France	507	8	7
United Kingdom	260	6.2	11.3
Italy	61	4	....
Total—Allies	828	18.2	18.3
<i>Other Countries</i>			
Russia	1,288	8	....
United States	348	1.8	....
Argentina	38	....	1.3
Canada	78	1.4	....
Total—World	5,313	75	77

indicate a surplus production of potatoes in Italy,¹⁰ and good crops in France and Great Britain. In the United States, the potato crop this year is given as 100,000,000 bushels above the pre-war average, and 175,000,000 above last year's crop.¹¹ The supply of this staple vegetable should be more than sufficient to meet the normal demand, and help relieve the great shortage in grains.

Sugar. In the year preceding the war, 1913, the world sugar crop was given at 20,883,000 tons. The wheat crop was 114,000,000 tons. This makes sugar one of the bulky food products and because of the high food value of sugar it stands next to rice and wheat as a world food. Of the 20,883,000 tons of sugar, 11,118,000 were cane sugar, the balance beet sugar. With the exception of the 733,000 tons of beet sugar produced in the United States, practically the entire beet sugar supply was grown in Central Europe. Germany, Russia and Austria-Hungary alone produced 67.4 per cent of the total beet sugar and 32.4 per cent of the total sugar supply. Germany and Austria-Hungary, and, to a lesser extent, Russia, were enormous exporters. In fact, every country of Europe, with the exception of Great Britain, Italy, Switzerland and Norway, and some of the Balkan States, was either meeting all its own sugar needs or producing for export. The United Kingdom, however, was not producing any sugar, and was, next to the United States, the largest importer of sugar in the world. Of the 2,000,000 tons of sugar imported into the United Kingdom, about one-third came from Germany and Austria-Hungary. Belgium, Holland and France were also exporting sugar to England.

The outbreak of the war made necessary a radical change in Europe's sugar supply. The big export market for German and Austrian sugar being shut off, sugar-beet production in these countries gave place to other crops. The Belgium beet sugar and much of the sugar-beet area of France came under Germany's control, so that even France was deprived of her own sugar supplies. The neutral importers, Norway and Switzerland, have remained in touch with the Central European sugar countries, but the western nations have been compelled to go to the tropics. This has given a great impetus to cane sugar growing.

In Russia there has been a great decline in beet sugar produc-

¹⁰ Commerce Reports, August 11, 1917, p. 547.

¹¹ Monthly Crop Report, September, 1917.

tion with the progress of the war. So great has been the decline that, according to the *International Sugar Journal*,¹² Russia this year will not produce enough to supply her needs.

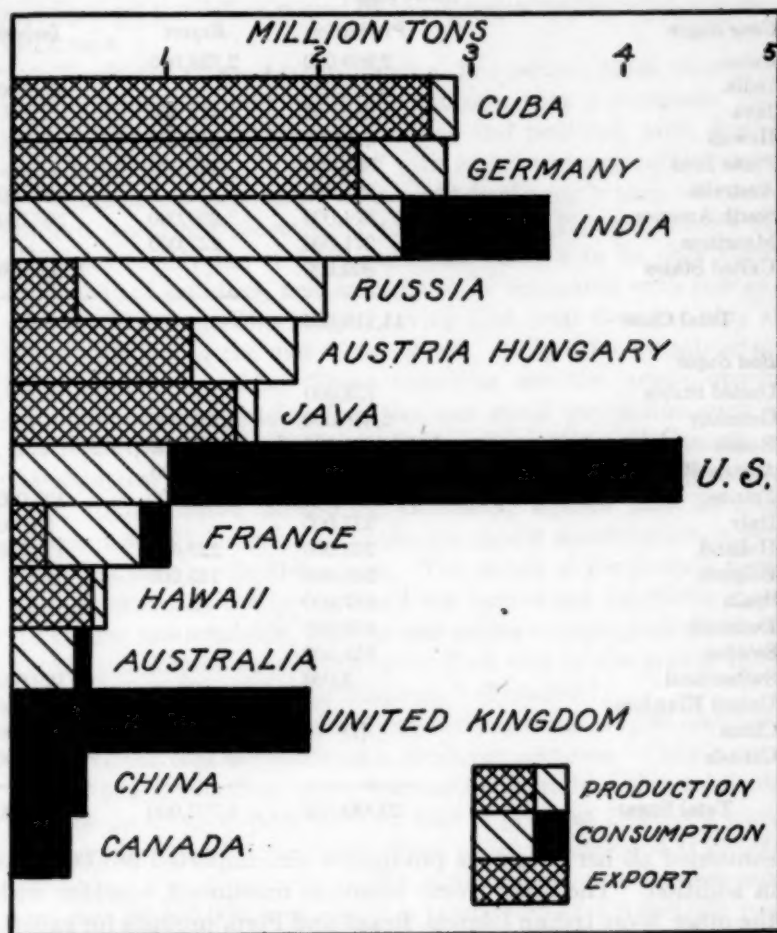


FIG. 8. PRODUCTION, EXPORT AND IMPORT OF SUGAR IN THE TEN LEADING SUGAR PRODUCING COUNTRIES, AND THE IMPORTS OF THE UNITED KINGDOM, CHINA AND CANADA. ARRANGED IN ORDER OF PRODUCTION, 1913.

A large percentage of the cane sugar of the world has been produced in Cuba, India, Java and Hawaii. Of these countries, India

¹² XXX, pp. 304, 305, July, 1917.

TABLE VII
PRODUCTION, EXPORT AND IMPORT OF SUGAR, 1913

	Short tons		
<i>Cane Sugar</i>	<i>Production</i>	<i>Export</i>	<i>Import</i>
Cuba	2,909,000	2,738,000	.....
India	2,534,000	.....	961,000
Java	1,591,000	1,471,000	.....
Hawaii	612,000	543,000	.....
Porto Rico	398,000	382,000	.....
Australia	397,000	.....	88,000
South America	874,000	250,000	206,000
Mauritius	271,000	227,000	.....
United States	300,000	.....	3,306,000
Total Cane	11,118,000		
<i>Beet Sugar</i>			
United States	733,000	.....	.....
Germany	2,886,000	2,231,000	.....
Russia	2,031,000	415,000 (1912)	.....
Austria-Hungary	1,858,000	1,184,000	.....
France	861,000	221,000	123,000
Italy	337,000	.....	15,000
Holland	253,000	220,000	123,000
Belgium	249,000	125,000	.....
Spain	187,000	.....	.....
Denmark	158,000	.....	.....
Sweden	151,000	.....	.....
Switzerland	5,000	.....	129,000
United Kingdom	....	.....	1,936,000
China	(?)	.....	474,000
Canada	....	.....	335,000
Total Sugar	20,883,000	9,707,000	8,925,000

consumed all her enormous production and imported 961,000 tons in addition. The other tropic countries mentioned, together with the other West Indian Islands, Brazil and Peru, produce for export. The war has greatly stimulated the sugar industry of the tropics, especially of the West Indies, South America, Formosa and Java, reviving the ancient industry. The 1916-1917 crops of cane sugar will surpass all previous records. England and France are now receiving their sugar import from the East and West Indies, Mauritius and indirectly the United States. The establishment of new

sugar plantations, with the installation of necessary machinery for crushing and preparing the raw sugar for market, is not a rapid process and the extension of the sugar cane production cannot rapidly meet the deficit caused by the upheaval of the sugar industry in Europe.

Meats and Other Animal Foods. The animal foods consist of meats (principally beef, pork and mutton, with a relatively very small amount of goat, horse, dogmeat and poultry), milk, butter and cheese, and fish. Compared with grains and vegetables, meats are of much less importance as a world food supply than we of the western world are accustomed to thinking. Figure 1 shows the combined food value of beef, pork and mutton to be only three-fifths that of potatoes, and scarcely to be compared with rice and wheat. This is another way of saying that meat does not play an important part in the diet of the world. Only a few countries are large meat consumers. These countries are the newly opened countries of large grazing facilities and small population such as Australia, New Zealand, United States, Argentina and Canada, or the countries of large industrial population that can readily import meat. The United Kingdom, Germany, France and Belgium represent such countries. But the per capita consumption is very much less than in the first group. The people of the densely populated countries of the far east and the tropics eat very little meat. No figures are available, but the per capita consumption of China would probably be very much lower than that of the lowest European country shown in the diagram. (Figure 9.)

Not only is meat consumption relatively small in most countries, but the meat that is consumed is produced at home. Only a small part of the production enters international trade. The total tonnage of meats in import trade in 1912 is given at 2,400,000 tons,¹³ 8 per cent of the world's consumption, which is estimated at 25,000,000 tons. The movement of the world wheat crop for the same year was 22,500,000 tons out of a production of 114,000,000 tons. Over 85 per cent of the world exports of meat in 1912 were supplied by five countries, *viz.*, Argentina and Uruguay, 36 per cent; United States, 31.1 per cent; Australia and New Zealand, 18.7. Canada, Denmark and Russia supplied practically all of the remain-

¹³G. K. Holmes, *Meat Situation in the United States*, Part I. Report No. 109, U. S. Dept. of Agriculture, Office of the Secretary, p. 15.

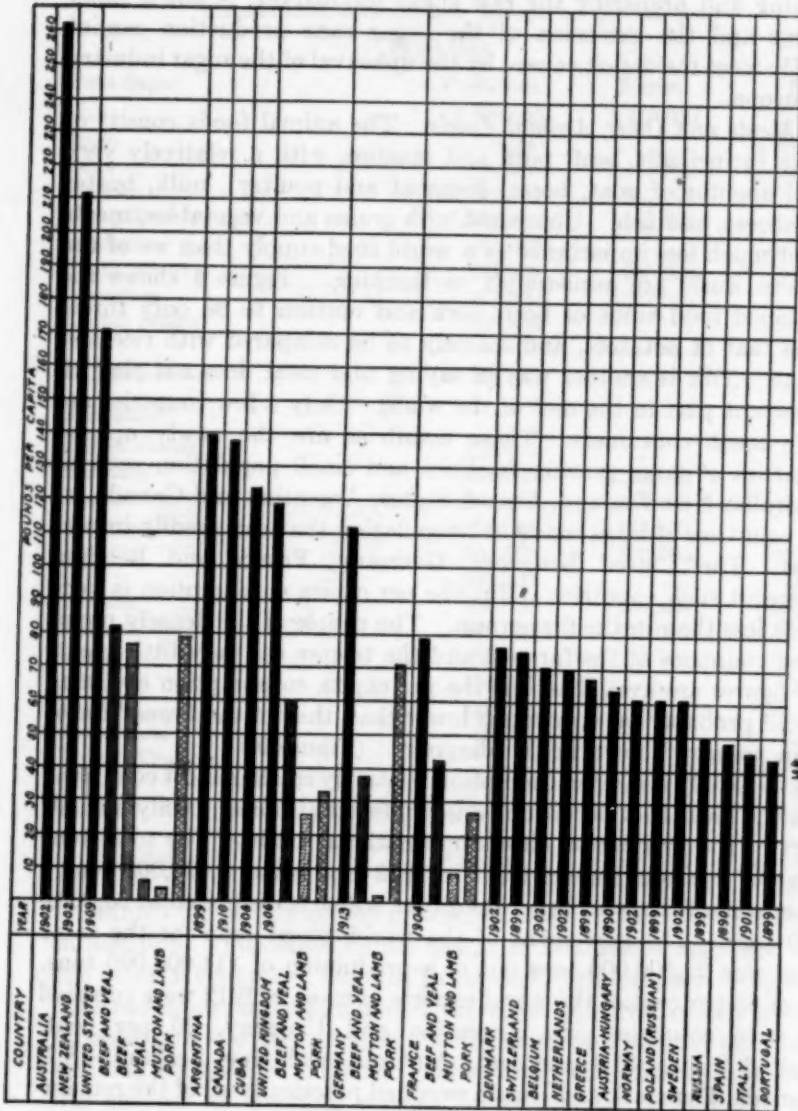


FIG. 9. PER CAPITA CONSUMPTION OF MEAT.

*From G. K. Holmes, *The Meat Situation in the United States*, Dept. of Agriculture, Office of the Secretary, Report No. 109.

der. The only country in which imports of meat constituted a large proportion of the consumption was the United Kingdom, 40 per cent of this country's meat needs being imported. This was nearly 62 per cent of the total world imports of meats. Germany, Holland, Belgium, France, Russia, Switzerland, Norway, Sweden, Denmark and Spain were all importers of meats, fats and oils. The only country outside of Europe which imports meats in considerable quantity is Cuba. Beginning with 1913, however, a considerable and growing importation of meat into the United States had developed, principally of chilled meat from Argentina and Australasia. This importation in 1914 amounted to 200,000,000 pounds and in 1915 to 223,000,000 pounds, making the United States the fourth country in importance as an importer of meat, as well as the leading exporter.

The effect of the war upon the meat supply is very difficult to measure with any high degree of accuracy. The great demand for food for man, combined with the difficulty of importing animal fodder, or the desire to use the grains for food rather than for fodder, has caused an increased slaughter of animals. According to the United States Food Commission,¹⁴ the number of meat producing animals has decreased since the outbreak of the war by 115,005,000, divided as follows: cattle, 28,080,000; sheep, 54,500,000; hogs, 32,425,000. The greatest reduction was, of course, in the warring nations and some of the nearby neutrals. But the increased slaughter in some of the surplus meat countries seriously depleted the number. For example, the number of sheep in Australia fell from 78,600,000 in 1904 to 72,300,000 in 1916. In France, the decrease is estimated to have been for cattle from 14,800,000 in December, 1913 to 10,845,000 in 1916; for hogs, from 7,047,000 in 1913 to 4,362,000 in 1916.¹⁵ In the Netherlands and Norway there has been a slight increase in the number of animals.

German stocks were seriously reduced in the fall of 1914 and early 1915, but apparently have been gradually increased since.¹⁶ If the accounts that have come to us of the food shortages in Germany are at all correct, one of the most serious deficiencies is in animal fats and foods.

¹⁴ Washington Official Bulletin, August 21, 1917.

¹⁵ Data from Robert W. Woodbury, personal communication.

¹⁶ *Ibid.*

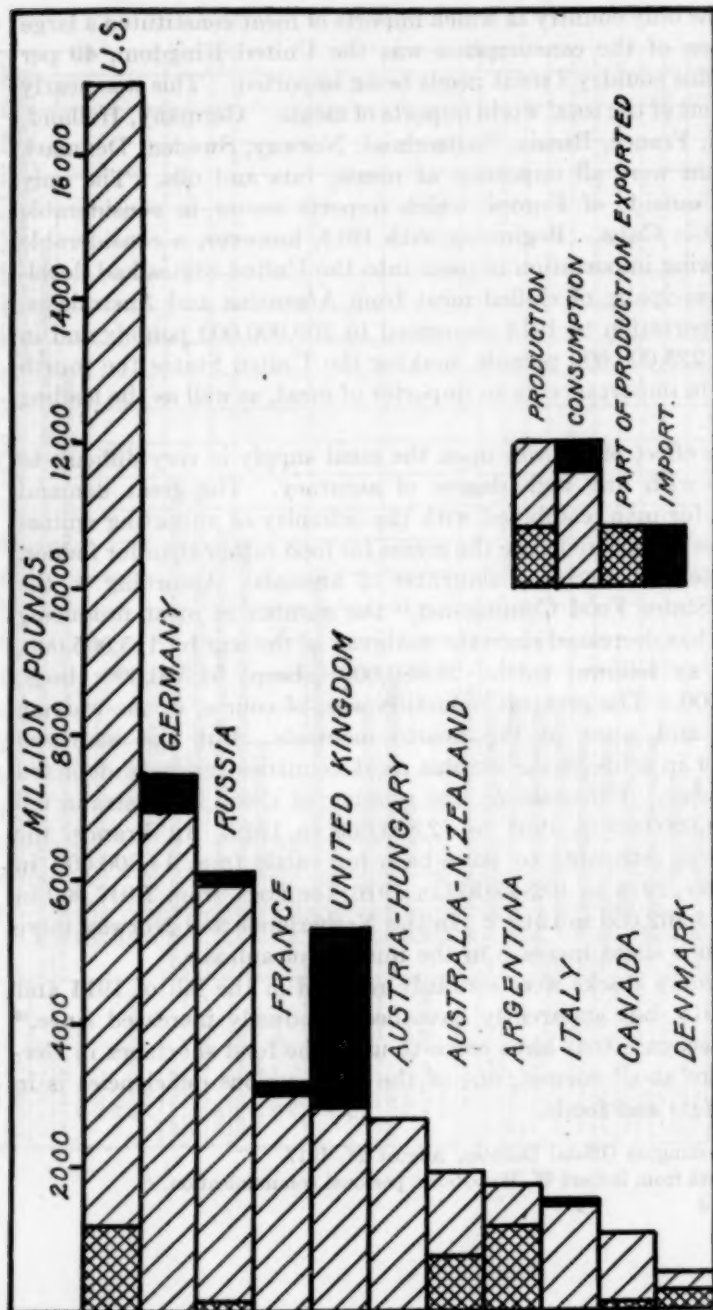


FIG. 10. PRODUCTION, EXPORT AND IMPORT OF MEAT (BEEF, PORK AND MUTTON) IN THE LEADING PRODUCING COUNTRIES. THE CROSS LINES INDICATE THE PART OF PRODUCTION EXPORTED, THE BLACK SHADING THE IMPORTS. DATA FROM G. K. HOLMES, *The Meat Situation in the United States*. REPORT 100, OFFICE OF SECRETARY, U. S. DEPT. OF AGRICULTURE.

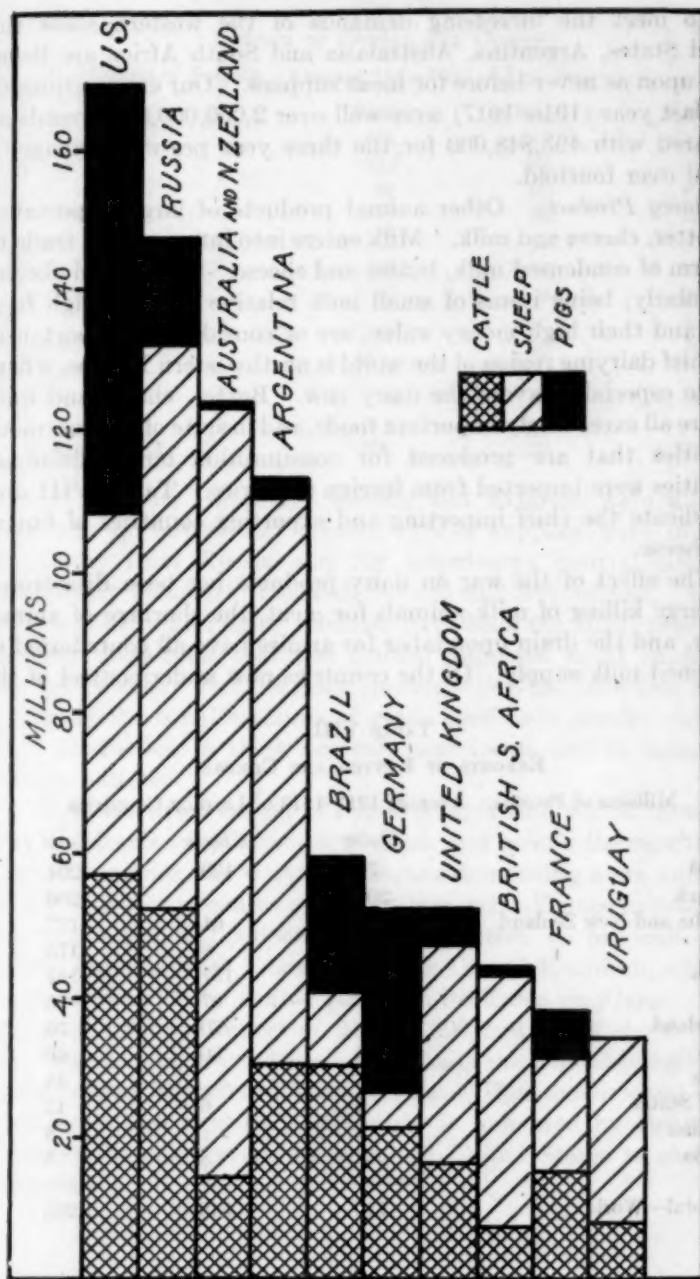


FIG. 11. NUMBER OF MEAT PRODUCING ANIMALS IN TEN LEADING COUNTRIES (CHINA NOT INCLUDED).

To meet the increasing demands of the western allies the United States, Argentina, Australasia and South Africa are being called upon as never before for meat supplies. Our exportations of meat last year (1916-1917) were well over 2,000,000,000 pounds as compared with 493,848,000 for the three year pre-war average, a gain of over fourfold.

Dairy Products. Other animal products of large importance are butter, cheese and milk. Milk enters into international trade in the form of condensed milk, butter and cheese. Butter and cheese, particularly, being items of small bulk relative to their high food value and their high money value, are of considerable importance. The chief dairying region of the world is northwestern Europe, where climate especially favors the dairy cow. Butter, cheese and milk here are all exceedingly important foods, and in spite of the enormous quantities that are produced for consumption large additional quantities were imported from foreign countries. Tables VIII and IX indicate the chief importing and exporting countries of butter and cheese.

The effect of the war on dairy products has been disastrous. The large killing of milk animals for meat, the shortage of animal fodder, and the drain upon labor for armies have all contributed to a lessened milk supply. Of the countries now under control of the

TABLE VIII

EXPORTS OF BUTTER AND CHEESE

Millions of Pounds. Average 1911-1913 of Leading Countries

	<i>Butter</i>	<i>Cheese</i>	<i>Total</i>
Holland	71	130	201
Denmark	200	...	200
Australia and New Zealand	116	61	177
Russia	167	8	175
Canada	4	157	161
Italy	8	67	75
Switzerland	...	70	70
France	36	30	66
Sweden	48	...	48
United States	5	6	11
Argentina	8.3	...	8
Bulgaria	...	5	5
Total—World	710	548	1,258

TABLE IX

IMPORTS OF BUTTER AND CHEESE

Millions of Pounds. Average 1911-1913 of Leading Countries

	<i>Butter</i>	<i>Cheese</i>	<i>Total</i>
United Kingdom	451	253	704
Germany	122	50	172
France	16	49	65
United States	...	50	50
Belgium	15	32	47
Austria-Hungary	10	13	23
Switzerland	12	8	20
Italy	...	12	12
Argentina	...	10	10
Canada	6	...	6
Denmark	6	...	6
Total—World	697	539	1,236

Central Powers, Germany, Austria and Belgium were all large importers of butter and cheese. These supplies were obtained principally from Russia and the neighboring neutral countries, particularly Denmark, Holland, Sweden and Switzerland. During the war, butter and dairy products have been the chief, practically the only, foodstuffs, that the neutral countries could supply the Central Powers. But the grain shortages and the decreased ability to import the usual amounts of cattle food have greatly curtailed dairy production in these neutral countries as well as among the warring nations.

With the usual supply of butter from Russia cut off, combined with the decreased production at home and among the neighboring neutral countries, the western allies are demanding more and more butter, cheese and condensed milk from extra-European countries. Before the war, 451,000,000 pounds of butter, 65 per cent of the world's imports, were brought into the United Kingdom, although the production of the United Kingdom itself was very large. This, combined with an import of 253,000,000 pounds of cheese and a very large import of condensed milk, made the United Kingdom by far the largest importer of dairy supplies. How this demand is now put upon countries outside of Europe is indicated by the growth of exports of dairy products from the United States as shown in Table X.

TABLE X

EXPORTS OF BUTTER, CHEESE AND MILK FROM UNITED STATES

	<i>Butter (lbs.)</i>	<i>Cheese (lbs.)</i>	<i>Condensed Milk (lbs.)</i>
1913	3,585,600	2,599,058	16,525,918
1916-1917	26,835,092	66,087,213	259,102,213

The importance of milk and its products as a food for western nations is exceedingly great, especially when we consider the relation of the milk supply to the strength and development of children. A real danger of shortage of this food faces the nations today, both in Europe and in the United States, unless immediate steps are taken looking toward the increase in dairy cattle.

Fish. The catching of food fish is almost universal, and since fishing is practiced by the individual on a small scale with rod along the brook as well as by great fishing fleets upon the high seas, it is very difficult to even roughly estimate the amount of food thus supplied. In Japan fish is a staple article of diet of first-class importance. But even here the grains and vegetables are very much more important. In most other countries fish is relatively of very small importance. One writer¹⁷ states that the fish catch in the United States is not one-fifth as valuable as the butter produced, and that the fish of all the world are only two-thirds as valuable as the poultry and egg production of the United States. Nevertheless, fish is an article of diet of no mean importance in several countries in Europe, as is shown by Table XI.

TABLE XI

PER CAPITA CONSUMPTION OF FISH

	<i>Pounds</i>		<i>Pounds</i>
United Kingdom	41.4 (1913)	Norway	140.9 (1915)
France	14.2 (pre-war)	Sweden	44.3 (1914)
Germany	19.1	Holland	15.4 (1913)
Denmark	26.5 (1913)	United States	21.2 (1908)

In the Scandinavian countries, Denmark and United Kingdom, fish was of considerable more importance than in France, Holland or Germany. That the problem of securing fish supplies is now more difficult is to be expected from the naval activities in the North

¹⁷ J. R. Smith, *Industrial and Commercial Geography*, p. 324.

Sea and surrounding waters. The estimated fish production of the United Kingdom for 1917 is placed at 8,000,000 cwt. or less than one-third the production of 1913. French production for 1917 will be one-third that of pre-war production; Germany secured three-fourths of her fish produced from the North Sea before the war and in addition imported large quantities. It would be safe to estimate Germany's fish production for 1917 as probably not over half of the pre-war production. On the other hand, Sweden, Holland and Denmark have increased their fish production in the last three years, and Norway's production has remained nearly stationary.¹⁸

CONCLUSION

The outstanding fact in reviewing the food supply of the world is the importance of Europe as an agricultural and grazing region. In spite of Europe's small area, great industrial development and large population, it is the greatest agricultural region of the world. Here are produced the largest supplies of wheat, rye, barley, oats, potatoes, sugar, meats and dairy products, and many other of the important foods of man. In 1913, 65.4 per cent of the world's total production of wheat, oats, rye and barley were grown in Europe; 90.5 per cent of the world's potato crop; 43 per cent of the world's sugar; 18 per cent of the world's corn; 31.8 per cent of the world's cattle. With the exception of rice, millet and corn, Europe leads the world in the production of most of the great staple articles that feed mankind. In spite of this enormous production, Europe is the chief importer from the outside world of foodstuffs and other supplies, like fertilizer and fodder, that are used in producing foods. With the disorganization of the agricultural life occasioned by the war, both in Europe and outside of Europe, with the great demand upon the ship tonnage of the world, needed for war purposes and decreasing as the ravages of the submarine continue, with the actual destruction of large amounts of foods by the destructive agencies of war on land and the sinking of food ships on the sea, the provisioning of Europe is a serious problem. So big is it, indeed, that the food resources of all the world, under existing organization, are being strained to the utmost to meet the needs.

¹⁸ Information in regard to fish is from Robert W. Woodbury, personal communication.

INTERNATIONAL RATIONING

BY BURWELL S. CUTLER,

Acting Chief of the Bureau of Foreign and Domestic Commerce, United States
Department of Commerce.

Proceeding out of the congregative instinct to which all self-governing animals give themselves when in prolonged trouble, mankind is now dividing itself into two main camps of warlike and economic action. Each camp aims to make of itself a complete economic entity, self-sustaining and aggressively independent. Rationing schemes under governmental authority and administered by semi-official committees are everywhere in evidence.

I propose the idea that the plan of national and international rationing grows out of the instinct of self-preservation and will continue, under the stress of economic pressure following the war, to be a permanent feature of civilization.

Let me describe to you briefly the European committees in operation. Many of these do not confine their supervision to food-stuffs or industrial materials although it is true that all of them have a direct bearing on the ebb and flow of commodities in the final analysis.

In London we have:

1. *The Contraband Committee* whose purpose is self-evident;
2. *The War Trade Intelligence Department* whose duty it is to see that individuals and concerns are prohibited from supplying the enemy with useful intelligence, credit, foodstuffs or other materials;
3. *A War Trade Statistical Department* which collects data proving the normal and extraordinary needs of markets at home, in enemy countries and in neutral countries; its recommendations are the basis for action by most of the other committees;
4. *A War Trade Department* which concerns itself with licensing exports, especially wool, cotton, rubber and tin; one of its chief duties is to supervise the exportation of these materials in amounts adequate to the fulfillment of British war contracts in this country;
5. *A Ministry of Shipping* within whose control rests the disposition of practically all the European ocean tonnage in the hands of private concerns or of governments outside of Germany; it corresponds to our own shipping board but has the additional privilege of taking over the management of neutral and allied merchant fleets;
6. *A Coal Exports Committee* whose purpose is plain;

7. *A Commission for Re-Victualment*; this is perhaps the most important of them all inasmuch as it lays down a rigid program of allotment on foods and raw materials for every country within the influence of Great Britain, and there is no appeal from its decisions, especially on materials controlled by the British government.

The French committees are, of course, more limited in number, due to the fact that a large part of allied responsibility has been willingly placed on the shoulders of the British committees which I have mentioned. At present I might list the French committees as follows:

1. *A Committee for Restricting the Provisioning and Commerce of the Enemy*; it is composed of representatives technically qualified to decide either on the indispensability of a product of enemy origin or on the advisability of accepting requisitions presented by private persons for said products or merchandise, the importation of which is generally prohibited in view of their origin. The findings of this committee serve as a technical basis for decisions by the French administration. Its official members are exclusively French scientists, but its meetings are attended by representatives of the Italian and Russian embassies at Paris and by one of the British Embassy secretaries; these three outside collaborators act as friendly counsellors and not as members.

2. *An International Committee on Contingents*, the word "contingent" being used here in a technical sense that did not obtain prior to the war. The committee is charged with the study and determination of cases relative to Switzerland's need of merchandise that must find its way across France and Italy to destination. As in the case of other committees its resolutions are based on comparative statistics for peace and war times, it being the purpose to eliminate whatever part of the importation is plainly intended for the Central Empires. The members of this commission are men of technical training in custom duties and research of a like nature. There is practically nothing opinionative about their work, it being exclusively a matter of proven data. There is another name for this committee in French terms that has been abbreviated to the rather famous expression "S. S. S.," meaning Swiss Society on Economic Surveillance.

3. *A Permanent International Committee of Economic Action*; this is composed of representatives of the various allied governments and met first at Paris in June, 1916, to adopt resolutions for an economic alliance between the Entente Allies that would continue after the war. It has deliberated and decided on all matters relating to the blockade and especially relating to questions of insurance, black lists and contraband. It is in effect the French side of several London committees supervising blockade, war intelligence and insurance.

It has been impossible, of course, to keep strict lines of demarcation between the activities of these three French committees, but danger of duplication and of conflicting action is reduced to a minimum by the close supervision of Baron Denys Cochin who is the president of all three committees.

It can hardly be said that both the London and Paris committees are actuated by identical motives, although in a general way they follow the lines which we in this country have adopted to conserve first of all for ourselves the products that we most need. Quite naturally, too, the declared principle of conservation is used sometimes to serve a policy of protection to home trade. I may give you the instance of a certain country which declined politely to discuss the lifting of an embargo on its imports because it claimed the right to restrict purchases by its citizens on the ground of public economy, of conservation of wharf and railroad facilities, of saving freight handling and of lack of ocean tonnage. In the end, however, these arguments were not strong enough to conceal a powerful effort on the part of certain capital interests in that country to build up a manufacturing monopoly in a group of commodities which have always been imported heretofore. The abuse is not general; nor is it always inexcusable.

Our own rationing scheme is a very simple matter, but not being thoroughly understood by the public in general, I make free to describe it as follows:

Under proclamation by the President, to whom power is delegated by Congress, the principle has been adopted that we must first of all conserve our own products where they are most needed by our own people. Our surplus—and we will figure it liberally—goes in just proportions to our associates in the war, particularly when their armies must be served; out of this surplus we must also allot something to the neutral nations of the world where their loyalty to our cause is beyond question.

The policy underlying our conservation plan is given by the President to the Exports Council, composed of the three Secretaries of State, Agriculture and Commerce, together with the United States Food Administrator. These officials in turn have each delegated a representative to the formation of an Exports Administrative Board which is instructed to collect all data on the subject of domestic and foreign needs so that a definite recommendation may be

made by it, back to the council. Under this board exists a Bureau of Export Licenses that stands as the clerical mechanism, its duties being to receive applications for export, pass them through the searching test of commodity and trading investigation and then to grant export licenses if the test is survived. Modifications or additions to the controlled list and to the regulations pertaining thereto are deliberated upon by the Exports Administrative Board and transmitted with a recommendation to the Exports Council which considers both the foreign and domestic policy involved and makes its own recommendation to the President, if the matter is one of international significance; whereupon the President renders a decision which goes back again over the same track to the Bureau of Export Licenses with instructions to act. Ordinary export applications go directly to the clerical force and out again.

Another feature of the rationing plan that attracts our attention is the purchase by government of a supply of materials in the country where they originate. Great Britain has bought the entire Australian wool clip for this year and holds it subject to her orders. She also has purchased large amounts of raw sugar which are transported to warehouses in England where they are held subject to scientific distribution to various home refineries, all under agreement to furnish the refined article at reasonable prices, first to the army and then to the public. *The London Times Trade Supplement* is authority for the statement that the following products in substantial quantities are controlled by the British government:

Coffee	Leather	Preserved meat
Coal	Maize	Rubber
Copra	Meat	Sugar
Diamonds	Metals	Tanning materials
Feeding stuffs	Oil seed	Tobacco
Grain	Paper	Wood
Jute and its fabrics	Petrol	Wool

Control in the United Kingdom of these commodities is exercised through the following agencies: Ministry of Food, Army Council, Board of Trade, Ministry of Munitions and other semi-official committees such as the Royal Commission on Sugar, and others. Most of the articles controlled are under the jurisdiction of the Army Council whose authority issues from the Defense of the Realm regulations. While the Army Council is interested primarily

in war materials, so many products are now included under that classification that the Army Council may be said to have in charge the majority of the products controlled by the British government. Whether this outcome is the result of the peculiar operation of the law or of the superior ability of the men composing the committee is unknown to me. This council usually exercises its control by taking possession of stocks existing in the country and in many cases fixing the price for such materials, just as our food administration is empowered by the President to do.

At this date the only commodities that have been bought outright by the British government at the point of production are wool and sugar. The announced motive back of the Australian wool purchase was the desire of that government to utilize the credit which they possessed there for the very immediate benefit of Australia which stood in need of ready funds, but I am disposed to believe that the pressing need of this material in all parts of the world, particularly here, appealed to Great Britain as a trade advantage which should not be neglected. It follows naturally that the owners of the wool will apportion it with a fine regard to reciprocal advantages, both here and in other countries, although I do not mean to say that any sharp purposes will be served.

The same government is also exercising a rationing power over the following stocks which are held in quantity at ports controlled by them, namely: mohair, cotton, linen yarns, flax, jute, hemp, corn, rice, oils, seeds, beans, peas, etc., pork and other meats, together with butter, leather, copper, lead, aluminum, petroleum, tin, rubber, coal tar, wax and cabinet woods. The list is increasing day by day.

To put it briefly, our English relatives have given up the notion that non-interference in trade is essential to the initiative of the individual and his prosperity. They have apparently conceded the principle of governmental control of commodities for the benefit of the nation. Although this means right now a first consideration of army needs, it will mean very soon an equal regard for the needs of the consuming public. That the plan should be developed with an eye to trading possibilities is also natural, even though it is a matter of subordinate importance for some time to come. If I am a competent judge of the situation, I may say that the powerful industrial associations, to which the British government has given power of distribution, are in existence today by

reason of a conviction that large and efficient organizations have ceased to be a public menace and have become a prime requisite for economic survival. Notably in Europe and less notably here, aggregations of capital and coöperative effort have been found necessary to the maintenance of national power at home and abroad.

Italy likewise has placed an embargo on the exportation of the several commodities for which she is famous and they represent the larger part of her industrial activity, notably olive oil, macaroni, tomato paste, etc. With striking consistency she allows the free departure of citrus fruits since this is a surplus product and has no food value as compared with the other commodities. Spain, too, has embargoed olive oil in addition to other commodities which are necessary for the food and industrial activity of her people.

Unless this country takes similar measures in the purchase or control of basic commodities which it does produce or may purchase, we may find ourselves very soon at the mercy of competing nations that will either starve us or force us into bargains which we do not now contemplate. In a measure, but not yet adequate to the situation, we are trying to establish our economic independence by the private purchase of certain raw materials in bulk from Russia, Spain and from South American countries, by the process of an exchange for manufactured commodities which we turn out as characteristic products. We are, however, seriously handicapped by the lack of a merchant marine since we cannot provide transportation after the deal in all other particulars is made.

This is the place, possibly, to express the opinion that when it comes to the final issue in warlike or economic competition, the country which can produce the greater number of basic materials has the whiphand. Consequently, one may not view with complete satisfaction a disproportionate growth of liberal arts manufacture. It is plainly to be seen that the refining process, when dependent upon an outside supply of raw material, is completely at the mercy of the countries which control the raw material.

In the present state of affairs we find the exportation of raw materials mounting steadily since August 4, 1914. Are we losing what others are saving? It is to be hoped that the present export control will partly remedy the situation. Our importation of raw materials for April this year amounted to \$94,094,515, for May, \$108,036,640, and for June, \$114,876,294, a steady increase, whereas

the exportation of finished products has notably declined where they were destined for public consumption; military needs must, of course, be eliminated for a clear judgment of the normal exportation.

The end of the war will not, in itself, expand the supply of available materials. In fact, there is every reason to anticipate a greater disproportion between international needs and the supplies on hand.

When we look back at our exports for the first seven months of 1914, covering breadstuffs, cotton seed oil, cattle, hogs and sheep, meat and dairy products, cotton and mineral oils, we find a total of \$494,294,000. This is in great contrast to the total for the same seven months of 1916 amounting to \$783,981,000; an increase of 80 per cent. Consult, if you please, the identical total covering these commodities for the first seven months of 1917 and you find a matter of \$1,007,065,000, or an increase of approximately 225 per cent on the figures for 1913, when we considered conditions fairly normal. Have we been squandering the riches of our land without much regard for the need of future generations? Such excuse as we have today as purveyors of materials absolutely necessary to the maintenance of our associates in the war, did not exist prior to April, 1917.

The industrial property and homes that will have to be restored to normal activity and usefulness after the war will mean a much greater drain on the world's resources than is now taking place on account of war requirements. In France alone, devastated territory must be built up to the extent of millions upon millions of dollars. In Belgium an even more extensive restoration must be made. When one thinks of the materials which will be requisitioned for these two territories alone, one is justified in wondering whether any price will be too high to pay for any material.

What result will the present and future expenditure of basic materials have on the market supply, if they are not regulated? Very plainly a speedy exhaustion of the available stocks. Before this situation actually arrives, every nation will, I think, automatically adopt a system of embargo on exports, subject first to the needs of its people and second to the exchange possibilities which other nations afford.

It may be expected that an economic alliance of the entire world will eventually come about by the process of one nation pairing with another and those two combining with others until a large

aggregation of them acts as a single comprehensive family. If they eventually join hands covering the entire earth, wherever civilization is in authority, they will be doing nothing more or less than what primitive peoples accomplished by instinct in a smaller way. I refer to the community relations between family, clan and tribe.

Even before our entrance into the war the Entente Allies proposed an economic alliance, comprising all the war associates on their side of the conflict, for operation following the end of hostilities. This proposal has serious defects, however, inasmuch as it is based almost wholly on belligerent motives and is in defiance of the fundamental laws which have compelled commerce as far back as we can see. I cannot conceive that French manufacturers, as an example, can survive international competition if they are forced arbitrarily to buy from Italy or England or Russia or from this country materials that may, on the other hand, be laid at their doors over night by a short railroad haul from Germany. Propinquity in commerce is a cardinal advantage, and is not easily overridden.

As I have said, one may anticipate that rationing committees will appear by government order in all countries. Supplementary to a home committee or organization for the apportionment of domestic products we might have in Italy an expert in olive oils whose duty it is to purchase for dealers in the United States such quantities as the Italian government allows to go out to us; and a marble expert and a silk expert are every bit as probable. These representatives would naturally resolve into a buying commission, whose further part it would be to secure from our own country such commodities in exchange as Italy might want for herself. Likewise, Italy would have her commission on this side. In each country it would be necessary to establish a banking credit, to the end that said credit, if one eventuates, will be remittable to the side whose purchases are short, unless the credit is ordered to stand against further purchases—a very probable outcome. The stabilizing of monetary exchange, so essential to peaceful commerce, would thereby become comparatively automatic. As a matter of fact, vast purchases from Russia have been and are being consummated by such a process at this time, with the financial service performed by American banks, as one might expect.

We must disabuse our minds of the notion, held unconsciously or as a principle of faith, that trading beyond our own boundaries is

abnormal or of importance secondary to domestic trading. Ocean-borne commerce constitutes the bulk of all trading for many European countries, notably Great Britain and Germany. The foreign trade of the first country for 1913, the year prior to the war, amounted to \$5,451,000,000; that of Germany figures \$4,966,000,000. That our own foreign trade ranked third after both those countries, with a figure of \$4,278,000,000, proves to my mind not so much the success of our foreign trade enterprise as it does indicate the tremendous quantities of raw materials which European nations seek from this part of the North American continent. Although it is true that our finished products have been in the ascendancy, nevertheless it is to be noted that the component materials thereof originated very largely in the soil of this country. Of course, it is cheaper in many instances for the European purchasers to take materials in their refined forms than it is to import the raw products in gross bulk, at a great expense for freight and handling, and to then refine it on the other side.

I believe that the era of international rationing has arrived and that our own government must very soon recognize the instinctive need of new organization, both at home and abroad, to plan and maintain a constant supply of prime necessities. In the past, foreign relations have depended very largely on the political fancy of rulers, whether they be part of an autocratic, or monarchical, or republican régime. They may be expected sooner or later to follow the lines of economic association as dictated by the needs of the people.

INTRODUCTORY

BY CARL P. HÜBSCHER,

Secretary of Swiss Legation, Washington, D. C.

It would mean carrying coal to Newcastle should I, as a neutral diplomat whose thoughts are naturally concentrated upon the immediate needs of his country, attempt to add anything to the discussion, the more so as my friend, Professor Rappard, has in a masterly manner, elsewhere explained to you the position of Switzerland to the food question.

I may, however, ask your indulgence if I call to your attention the reasons why we representatives of foreign countries must be deeply indebted to the American Academy of Political and Social Science for having been given this opportunity to discuss the food question in an informal manner.

I have been connected with international affairs for many years and have been struck by the fact that, upon careful examination, we may find that the true root and origin of many international complications is too often mere misunderstanding—the sheer inability of both sides to comprehend the national character and ideals of one another—too often, also, negotiators are unable to divorce their personal feelings from their obligations as representatives of their respective nations.

In private life we observe that after a heart to heart talk, persons who have bitterly differed separate perhaps not as friends, but at least with a better understanding of each other's viewpoint.

The same is true in international life. Once the good will and desire is present to compose a misunderstanding by a free and open discussion, a solution of even a complicated international dispute may always be found.

To attain this end is necessary not only the more formal diplomatic negotiations, but also just such an open forum as the American Academy of Political and Social Science has arranged for the informal discussion of the food question.

This occasion provided by the Academy has made it possible

to present to the American public the views of foreign countries on the food embargo, and no one knows better than the citizens of the oldest republic in existence, Switzerland, that in the people themselves lies the ultimate verdict, and that is why we Swiss and we neutrals are justified in the assumption that a just solution of the food embargo will be found in the United States.

THE FOOD SITUATION OF NORWAY

BY FRIDTJOF NANSEN, D.Sc., D.C.L.,

Minister Plenipotentiary of Norway on Special Mission.

In spite of its great extension, Norway has not more than two and one-half million inhabitants. Our country thus has one of the smallest populations of any country in Europe though Norway is one of the oldest kingdoms existing. Though we are small our history may, however, be said to have proved that the Norwegian people possess some good qualities, ever since the days when the Norsemen were the first to cross the Atlantic Ocean and reach the shores of the new world where they established permanent colonies in Greenland. The Norsemen were, and are still, a strong race with a high degree of vitality which is proved for instance by the unusually low death rate in our country. For this and other reasons our people have during the last century increased in number more than any other European people. The increase of our population was on the basis of 100 to 254. If it had not been for the emigration, especially to this country, this increase would have been much greater. We have the doubtful honor of being that European country which next to Ireland has sent comparatively most emigrants across the ocean. In the latter half of the past century one-half million people left Norway and in the ten years from 1901 to 1910 no less than 190,000 left the country. In many years the emigration was more than half the increase by birth and in some years even more than the whole increase by birth. There are now said to be in this country one and one-half million Norwegians of the first and second generation.

The important question in connection with the subject interesting us at present is: How do the people of Norway live? What are their means of existence?

At all times agriculture and dairy farming or animal industry were by far the most important means of existence in Norway. The average value of the yearly agricultural production may be estimated to amount to something like two hundred million kroner, or between two hundred and two hundred and fifty millions.

A very important industry of the Norwegian people is the lumber trade. The total value of the production of this trade is not easy to estimate as so much of it is used at home on the farms. But the average value of the yearly export of the production of the forests was in the years 1906 to 1910 about eighty million kroner.

Our fisheries are naturally also of great importance and certainly not less so in late years. The value of the total catch of fish considered as raw material was for instance in 1910, sixty-eight million kroner, the value of our whaling fisheries being included. The export value of our fish and fish products is naturally considerably higher.

Especially in late years, manufacturing industry has become a very important factor in our national economy. In 1910, for instance, the value of our export of industrial products, mining products not included, was one hundred and ten million kroner. Here, however, are included certain products of the lumber trade such as pulp, chemical pulp and paper. But the export of industrial products has increased very much for every year after 1910.

Finally may be mentioned our shipping, which is of very great importance to the Norwegian people and, I may say, also to several other nations, and certainly not less so during this war. The Norwegians were always a seafaring nation ever since the days when our ancestors were the horror of the coasts of Europe, until this day when we are a preëminently peaceful people and wish to remain so though it cannot be denied perhaps that still a little of the old adventurous spirit is burning in us.

Our poet Björnson has said: "*Vor ære og vor magt har hvite seil os bragt*" (i.e., our honor and our position we owe to our white sails). This is largely true even today though our white sails have now to a great extent been replaced by the black smoke of our steamers.

Though, as I said before, agriculture is the most important industry of the Norwegian people, the agricultural production must not be expected to amount to very great quantities for it has to be

considered that only $2\frac{1}{2}$ per cent of our land area is cultivated. If we also include in this calculation natural grass fields not ploughed, we reach about 4 per cent. This may seem a very small proportion of a country supposed to be inhabited by a civilized people; but it has to be considered that about 70 per cent of our extensive land area is occupied by mountains, snow mountains, glaciers and entirely barren ground. About 21 per cent of the total area is covered with forest. Also in this respect—the very small percentage of cultivated area—our country is unique amongst European countries. For the sake of comparison I may mention the following figures.

Finland is the country that comes next to us with a cultivated area of between 10 and 11 per cent of the total land surface; then comes Sweden with 12 per cent. Very different are the conditions in Denmark where 73 per cent of the total land area is cultivated. It is also of interest to notice that in mountainous Switzerland the cultivated land is 56 per cent of the total area.

Though very much has been done in order to develop our agriculture in every respect, it has not been possible to increase its production at the same rate as the population has been growing. Nevertheless, our agriculture may be said to have a fairly high standing. The cultivated ground yields, for instance, a much greater crop per acre than in most countries. This is largely due to our small holdings causing the soil to be better worked and manured. As, however, our cultivated area is comparatively so small, we are not able to produce more than a certain portion of the grain we need for living. This portion varies naturally somewhat with the harvest in the different years, but on the average it has lately been between one-third and one-half of the total amount we need. We have therefore had to import all the way from an equal quantity to double as much as we produce ourselves.

As an illustration it may be mentioned that during the three last years before the war, 1911 to 1913, our total import of grain and flour of all kinds (not including Indian corn chiefly for feeding animals) was on the average of 425,000 tons while our home production of grain during these years averaged 311,259 tons.

In the three years 1914 to 1916, that is during the war, the average import reached only the amount of 389,536 tons while our home production averaged 303,314 tons. It is thus seen that our import of grain as well as our home production has been less during the years of the war than before this time.

In the figures of our home production just given our crop of potatoes has not been included. If this be done the proportion between home production and import for human food will be somewhat different. In order to make the figures comparable, the nutritious value of the potatoes as well as that of the different kinds of grain has to be transferred to the value of one special kind of grain as a standard, and in our statistics barley has been chosen for this purpose. In order to give an impression of the change which has taken place in the proportion between home production and imports the figures obtained for a few different years may be useful.

	<i>Home Production</i>	<i>Import</i>
About 1855	75.0 per cent	25.0 per cent
" 1900	42.9 per cent	57.1 per cent
" 1911	38.8 per cent	61.2 per cent
" 1914-16	42.3 per cent	57.7 per cent

It will thus be understood that the proportion of the home production as compared with the import of grain has been constantly sinking during this time until about 1911 or the years before the war, but during the war it has again been somewhat increased. This is due to our natural desire to decrease our dependency on the import of grain as much as possible. The land area cultivated has been increased, especially this year, and our government has stimulated the agricultural production in every possible way by allotting free soil, by minimum prices, by importing fertilizers and reselling them at a sacrifice, etc. We therefore hoped that this year's crop would be essentially increased from what it has been in former years and the outlook early in the summer was also quite good; but a very long and continuous period of drought has spoiled our good prospects and, as I now have learned, much rain during the collecting of the crop, which is now going on, has caused serious difficulties.

If we take our imports of grain and our home production, the total average quantity of grain and flour available for consumption during the years 1911 to 1916 has been 715,000 tons per year. We might thus calculate the consumption at 60,000 tons per month, but here is also included seed as well as grain used for feeding animals. After having deducted the quantities necessary for these purposes, and considering that our population is two and one-half million inhabitants, we find that during the six years 1911 to 1916

the consumption of grain per head averaged 232 kilograms, or about 600 grams per day.

Before the war we received our greater part of grain and flour from Russia, Germany and Roumania. From the United States we only received a comparatively small portion which in the years 1911 to 1913 averaged 8 per cent of our total imports. In 1914 it was increased to 43 per cent which means that after the outbreak of the war in August the United States supplied us with practically all the grain and flour imported. In 1915 United States sent us 98 per cent and in 1916, 99 per cent of our total import of grain.

Though it is unnecessary, I may still mention here that we have naturally had no export of grain either before or after the outbreak of the war, with the exception of some diminutive quantities confined almost exclusively to a little grain and flour sent to the Pomors or inhabitants of northern Russia on the Kola Peninsula and a little trade across the frontier to the nearest districts of Sweden. There is of course prohibition against all exports of grain and cereals and no licenses are given for this frontier trade, except in accordance with the agreement with Great Britain.

The different kinds of grain as well as potatoes are naturally the chief sources of the *carbohydrates* necessary for the sustenance of the Norwegian people. But in this connection ought also to be mentioned sugar, though of less importance. No sugar is raised in Norway, and we therefore have to import all we need, which has on the average amounted to between 49,000 and 55,000 tons of sugar a year, corresponding to a consumption of about 50 grams per individual per day, or something like 20 kilograms in a year. This is much less than most other people consume. Of course we do not export sugar, except some few tons, 80 or 90 tons, that go across the frontier in the same way as the grain before mentioned.

Having thus mentioned the quantities of food containing carbohydrates consumed by the Norwegian people, I now propose to discuss another important part of the food, namely the fats. I may then first point out in general that the investigations on the nutrition of the Norwegian people show that their consumption of fats is relatively great as compared with that of the more southern nations of Europe. This is naturally explained by the climate of our country and by the hard work of the people and their way of living. The average low temperature and the long

winter make a greater production of the heat of the body necessary and besides this it is also to be considered that a comparatively great proportion of the men, fishermen, laborers in the forest, etc., have very hard work in the open air under severe climatic conditions. And it is a well-known experience that under such circumstances the increased need of food has chiefly to be covered by fats.

The average consumption of fat by a man in our country who has not hard work, amounts to about 100 grams of fat per day. By harder work his consumption is increased to 130 to 150 grams, and by work in the woods during the winter it is increased to 200 grams per day, a great portion of our men being engaged in this kind of work, especially in eastern Norway. This consumption of fat may be said to agree well with the conditions in the United States and Canada. According to his investigations on the food of the people in the United States and Canada, Professor Atwater, in his book *Methods and Results of Investigations on the Chemistry and Economy of Food*, calculates that the consumption of fat per individual should be about 158.5 grams per day. Assuming that the population of Norway, somewhat more than two and one-half million inhabitants, corresponds to a little more than two million of what might be called standard men, and if we further assume that these standard men need only 100 grams of fat per day, this will make a consumption of about 74,400 tons of fat for the whole of Norway per year. This quantity is, however, a minimum. As I said before, a great part of the population of Norway has hard work at comparatively low temperatures which will naturally increase the craving for fat, and if we increase the consumption of fat, for instance with 30 grams per day, it will make the quantity of fat needed for feeding Norwegian people in the year as much as 96,725 tons.

A careful calculation of Norway's production of fat which can be used for human food shows that it is about 53,700 tons per year on the average. In this quantity is included the fat of animals, cattle, sheep, swine about 15,000 tons, fat of milk and milk products—butter, cheese, etc.—with about 35,500 tons. Herring oil which is not used for human food is not included, but on the other hand, the fat contained in fresh and salted fish from the home fisheries is included in our calculation. All figures are calculated as net values, i.e., the quantity that is really available in the human organism.

If we take the calculation of our needs based upon 100 grams

of fat per day per each standard man, Norway will have a deficit of about 21,000 tons of fat per year which has to be imported. This is, as pointed out before, a minimum. With the consumption of 130 grams per man per day the deficit will be 43,000 tons. If we now look at our imports of fats and oils for human food we find that they agree very well with this more theoretical calculation. In the three years 1911 to 1913 our average yearly import of fats was 21,000 tons. In the three years during the war, 1914 to 1916, the average import was somewhat higher, namely 26,400 tons. If we take the imports for each year we find, however, that they were on the whole increasing somewhat even before the war. The increased import of fat after the outbreak of the war is also to a great extent explained by the decrease in our supplies of meat and pork, which decrease was very considerable if we consider the difference in import of live stock and our home production.

If it be considered that the quantities of fats mentioned are not net values, it will easily be understood that the people of Norway are decidedly not overfed, in regard to fat.

There still remains a very important part of foodstuffs and that is everything belonging to what is called with a general name—*protein*—contained chiefly in meat, fish, and also to some extent in grain. If we take it that each individual will want about the same daily ration of protein as fat it means that the yearly consumption of protein should also be about 74,000 tons. Of this we produce about 70,000 tons ourselves and consequently we should only be 4,000 tons short in this respect, a shortage which may easily be covered.

I have described the situation of the Norwegian people as to their food supplies and have tried to give you an idea of what we actually must import from abroad in order to live without suffering. Of course there are also many other things which we must import, for instance, material for our shipbuilding, raw material for our manufacturing industry, manufactures of various kinds, etc., which also are very necessary for our existence as a nation, but which now, when it is a question of to be or not to be, are not so important as the food.

The next question now is how the Norwegian people can obtain the means to cover the deficit in the balance of trade caused by the importation of these foodstuffs and other necessary articles.

For this purpose our fisheries are naturally of great importance producing some of our chief products of export. Altogether the value of the exported products of our fisheries averaged before the war about 100 million kroner a year. Besides England and Germany, Spain and Italy were very important markets for our fishery products before the war. During the war these markets have to a great extent been closed to us owing to the difficulty with tonnage. Our chief market now is England and also Germany. But I may mention that our export to Germany is now carried on in strict accordance with agreements with England, not allowing us to export more than a certain proportion of our catch to her enemy.

The products of our lumber trade consisting of timber, sawn timber, planed wood, manufactures of wood, pulp, chemical pulp, paper, etc., are naturally also of much importance for our balance of trade.

But besides this the exportation of products of the various other branches of our manufacturing industry becomes every year more and more important as was pointed out before. The export of our industrial products gave in 1910 an income of one hundred and fourteen and one-half million kroner, and this value has been substantially increased during recent years. The chief buyers of these industrial products during the war have without comparison been England and her allies, and our electro-chemical production has been especially valuable. This industry, used to a great extent to produce raw material for the agricultural and manufacturing industry of Germany, has during the war more and more become producer for England and her allies, especially France. The products we send them have been, as I understand it, of the very greatest importance. I may as an example mention the ammonium-nitrate sent to England, and especially to France. I may also mention other products as for instance cyanamid and also aluminum. According to what I have been told, a reduction or a stop of the exportation of these products would mean a very serious loss for your allies.

There is still left one branch of trade which is of the very greatest importance for our balance of trade, and that is our *shipping*. In order to give you an idea of how matters stand in this respect I may tell you that the average value of our *imports* in the four years from 1911 to 1914 inclusive was five hundred and sixty-one

million kroner, while the average value of *exports* during the same years was three hundred and ninety-one million kroner. This makes an average deficit of one hundred and seventy million kroner which is chiefly covered by our shipping. This shipping has during the war naturally to a great extent been directed to the shores of England and her allies as well as to this country, and—as you are probably aware—there has been and still is a great portion of our fleet sailing between United States and the West Indies and South America and also on your Pacific coast. Our shipping between Great Britain and her allies was not considered with friendly eyes by the Germans, and their U-boat warfare has to a very great extent been directed against our shipping, and our losses have therefore been heavier than those of any other neutral nation and I believe also greater than the losses of this great country until now. I cannot give you the exact figures at this moment, but I do not say too much when I say that one-third of our commercial fleet has been destroyed. It means that about one million Norwegian tons have been sunk and about 700 Norwegian sailors, or now probably more, have been killed. In spite of this the Germans have not been able to terrify the Norwegian sailors. I was told of only one instance when a Norwegian sailor refused to go because the ship was going to the war-zone. The consul in that port told him that he was very sorry to hear it because it was the first instance in his experience that a Norwegian sailor had refused to go because he was afraid. The sailor said nothing, went on board and did his duty.

I saw a report the other day of the sinking of a Norwegian vessel off the English coast. One of the surviving sailors was examined before the maritime court in London, and was asked whether he had been sunk before. He answered that this was the sixth time. On the suggestion of the judge that now he had probably got enough of it, he declared that he was of course going out again as soon as he could find a new employment.

But the destruction of our commercial fleet is constantly going on, and if this lasts very long the prospects are that it will be entirely destroyed. The Norwegians will no more belong to the seafaring nations—we who used to have the third commercial fleet in the world. We came next after England and the United States and were only in late years surpassed by Germany.

I have tried to give you an idea of the situation and the needs

of the Norwegian people. We are a small nation, that is true, of no great consequence in the world perhaps, whatever we ourselves may think, but still we are a nation, and we beg for nothing, we only ask for our right to exist. We consider it our duty to remain neutral and do our best to keep out of the war. We think that in this way we may also do the greatest service to the world.

We are of those who, in spite of all,

Never doubted clouds would break,
Never dreamed, though rights were worsted, wrong would triumph,
Held we fall to rise, are baffled to fight better,
Sleep to wake.

May all humanity awaken after this terrible crisis—I think the most serious one in the whole history of the world—may we awaken to see that there is one great purpose in life and that is not *destruction* of others, it is *development* of oneself, of all one's possibilities; that there is one high ideal of existence. Its name is not *power*, its name is *justice*!

SOUTH AMERICA'S AVAILABLE FOOD SUPPLY

BY HIS EXCELLENCY, SENOR DON IGNACIO CALDERON,

The Bolivian Minister.

All know that South America is a very vast continent, full of possibilities and great in resources, where ten independent republics are established, each one with its own characteristics; therefore, to speak of South America as a unit is misleading and inaccurate.

For instance, if we say that South America produces a great deal of wheat, it would mean that wheat is produced for export in all the countries. That is not the case. Wheat is not produced for export except in Argentine. If we say that tin is exported from South America, we also make a wrong statement, because tin is produced only in Bolivia, which gives to the world one-third of the production of that mineral. Therefore, it is not correct to say that tin is produced in South America.

I am going to give you a review of the exportable food resources of each of the countries in South America.

Agriculture is not very much developed in those republics

for the simple reason that they are wanting in means of easy and cheap transportation, which is an element very important in agriculture. Argentine is the only country in South America that, because of its advantageous geographical position and the lack of mountains, being entirely flat, and because it receives thousands of immigrants every year, has been able to develop its agricultural resources. Argentine exports every year large amounts of wheat, corn and barley. These same cereals are produced in small quantities in other countries. Rice is exported in small quantities from Peru and Brazil. Chile produces and exports some barley and oats and what they call frijoles, which is a kind of bean.

Coffee, as you all know, is the great staple article of Brazil; in fact, is the main export from Brazil. Venezuela and Colombia also export some large quantities of coffee; and Ecuador, Peru and Bolivia are also producers of it and export it in small quantities.

Cocoa is the staple product and the main export from Ecuador. Ecuador produces most of the cocoa that is used in the world. Venezuela, Colombia and also Brazil may be counted as providers and exporters of cocoa in smaller amounts.

Peru manufactures and sends out a great deal of sugar, and Argentine will perhaps soon be able to export it because the manufacture of sugar is improving, at the present time being only enough for home consumption.

These are the principal articles of agricultural production that are actually available in South America. Then of course, we have to count the tropical fruits, like bananas, oranges, pineapples and different kinds of nuts that are exported from the tropical countries, like Brazil, Colombia, Ecuador and Venezuela.

The products I have mentioned are simply those that are available for consumption in the present emergency all over the world. Each country produces different kinds of vegetables and cereals that are not exported, and therefore it is not necessary to mention them.

Argentine and Uruguay are the great centers of meat supply. In both countries there are millions of cattle. Chilled and frozen meats and jerked beef are exported in large quantities to all parts of the world. In the northern part of South America, that is to say, in Venezuela and Colombia, there is also an abundance of cattle. Beef is exported on the hoof to the West Indies. These two countries, as well as the southern countries, like Brazil, Paraguay and

Bolivia, have extensive grazing grounds where millions of cattle can be raised.

In fact, Bolivia, whose territory comprises more than seven hundred thousand square miles, has roaming, in the section neighboring to Argentine, Paraguay and Brazil, thousands of wild cattle in its vast grazing fields. They have already received the attention of the people in this country. I often receive letters from western farmers asking detailed information about the grazing grounds in Bolivia. Southern Argentine and Chile are developing a large sheep raising industry. There are great flocks in Patagonia and Tierra del Fuego.

This supply of meat is very interesting to the United States. If we take into consideration that from 1907 to 1917, the stock of cattle in this country has diminished, according to statistics, at least ten million heads, while the population increased more than fifteen million, it is a fortunate thing that in the great plains of Colombia and Venezuela, which have splendid grazing grounds, cattle could be raised in great numbers, just as in the other countries I have already mentioned, thus making it possible to supply the deficiency in this country.

Such is the summary of the products that South America could furnish to the world under the present circumstances.

Of course, many of the countries of South America import great quantities of flour from the United States. We in Bolivia import every year from twenty to thirty thousand tons of flour. It seems a shame that we have to import flour when we have such a fine climate and plenty of wheat. But transportation is too expensive and therefore, with the railroads that have been built lately in the neighboring countries and the cheap ocean freights, the American wheat can go to Bolivia cheaper than the native wheat can be transported a few hundred miles on mule back.

The facility of communication, the cheapness and the promptness of transportation, have so knitted the nations of the world that they have grown to depend on each other and to receive whatever is needed and to sell whatever they have to export. In this way, little by little, the extension of commerce and good-will among all the peoples has progressed almost to the extent of making the whole world into one single community.

But unfortunately, this condition of affairs has lately been abso-

lutely disorganized. War is desolating mankind. An autocrat filled with the crazy ambition of submitting the world to the dominion of might and military rule has trampled down the most sacred traditions and principles of international law. To accomplish his purpose is waging a war unique for its barbarism, inhumanity and immorality, cities have been burned, monuments of art that are the glory and pride of mankind have been wantonly destroyed, entire populations taken and brought away from their homes, women outraged, little children left homeless and without protection, the high seas turned into a bandit's lair to attack merchant ships and destroy them, and defenseless passengers drowned without mercy. It seems as if the author of this great calamity is bent on following literally the threat of his predecessor, Attila, who boasted that where the hoof of his horse trod, no blade of grass would ever grow.

No man with a heart, no nation mindful of its dignity and the conception of its life, will stand this wanton challenge to mankind. The United States has been compelled to put the whole weight of its immense financial resources and man power into the struggle, to defend its rights and vindicate the rights of mankind.

Its action will no doubt hasten victory, and I think will shorten this conflict. The day is not far when this night of horror and misery will be succeeded by the beautiful light of justice; and having thoroughly crushed military power and autocratic rule, the nations of the world will once more in peace and freedom resume their onward march, and preceded by the unsullied flag of the stars and stripes will advance toward progress and the attainment of the greatest ideals of mankind.

SWEDEN'S FOOD SUPPLY

BY HON. AXEL ROBERT NORDVALL,

Delegate of the Royal Swedish Government.

From early times it has been customary to give agriculture as the chief industry of Sweden. Today the country does not possess the same right to that description it once did. In the first place the number of persons engaged in agriculture has not increased in the same proportion as the population of the country. Where 82 per cent of the entire population was dependent on agriculture during the "twenties" and "thirties" of the last century, only 48 per cent was so classed in the last census in 1910. This decrease occurred simultaneously with an increase of crops produced, which means that greater economy has begun to be practiced with expensive human labor. Yet the fact remains that the diminished labor supply has in many places made it distinctly difficult to successfully carry on the work with undiminished intensity. While there has been a steady increase in the area of cultivated land and the crops obtained from it, this growth has not kept pace with the greater food needs of the population. In some earlier periods Sweden had a considerable surplus of grain but now she is obliged to import very large quantities of cereals.

In this connection it must be considered that agriculture, which in the middle of the nineteenth century was the *only* important Swedish industry, is now considerably exceeded in product value by the commodities turned out by the nation's factories. In other words, Sweden is more and more becoming a manufacturing country. Climate has probably been the most important factor in this change. It is incontestable that Sweden considering its northerly latitude is wonderfully favored in point of climate. And it is only fair to admit that we have America to thank for this to a very great extent in furnishing us with that marvelous thing—the Gulf Stream—on which I hope an embargo will never be placed.

But the life-giving warmth of the south is lacking. Most of the cultivated species in Sweden have to be grown in latitudes farther north than is favorable to them. The feeble sunshine of the north allows only a short growing period; night frosts are frequent. On the whole it might be said that the farther north, the greater the

cost of producing a crop of cultivated plants. It is therefore no marvel that agriculture is difficult, especially in rivalry with countries that possess more beneficent sunshine.

Rye and wheat are the two main bread producers in Sweden. Some barley is used in northern Sweden for bread making, but corn so far is unknown as a bread material. The yearly consumption of rye and wheat amounts to something over one million tons, or, in round figures, 40,000,000 bushels. An average rye crop in Sweden is about 600,000 tons or 24,000,000 bushels. Home grown wheat crops are usually about 220,000 tons or 9,000,000 bushels, making a total crop of bread cereals that approximates 33,000,000 bushels counting wheat and rye. Add to these figures the average yearly import of these grains, which is 12,000,000 bushels—mostly wheat—and deduct 5,000,000 bushels needed for seed and there remains a difference of about 40,000,000 bushels of rye and wheat needed each year to feed the Swedish population.

It might be of interest to know from which countries Sweden filled its pre-war grain requirements. In 1913, or the last year before the outbreak of the war, Sweden imported 8,500,000 bushels of wheat, of which 2,500,000 bushels came from Russia, 2,000,000 bushels from Germany, 700,000 bushels from Argentina and about 1,000,000 bushels each from the United States, India and Denmark. During the same year, 1913, 4,000,000 bushels of rye were imported, 3,000,000 bushels coming from Germany and the remainder from Russia.

These figures reveal the fact that before the war at least two-thirds of Sweden's grain cereal imports—12,500,000 bushels—came from the now belligerent nations, Russia and Germany. When, at the outbreak of the war, Sweden could not import grain from those countries and had to fill her requirements from other markets, it was only natural that she should turn to the United States.

In 1916 Sweden imported 12,000,000 bushels of wheat and rye, something less than the 1913 purchases. The United States furnished about 80 per cent, or 9,720,000 bushels, and Argentina provided the remainder—about 2,000,000 bushels. As will be seen from these figures, Sweden did not import more grain during 1916 than before the war, but actually bought a smaller quantity and changed the sources of her imports from Germany and Russia to the United States.

At the end of 1916, when shipping difficulties became more and more acute, the Swedish government took the precaution to take over all stocks of grain and flour and put the entire nation on a bread ration. In the beginning this ration was fixed at 12 kilograms (26.5 pounds) of bread grain a month for each person enrolled in the agricultural class, and 250 grams, or 9 ounces of flour a day for all other citizens.

During March of 1917 an inventory of the nation's grain stock was completed and it was discovered that the stores were much smaller than had been calculated. An error had been made in calculating the 1916 crop and it was immediately decided to cut down the bread ration considerably. The new ration, it was decided, should be 10 kilograms (22 pounds) a month for each person in the agricultural class and 200 grams, or 7 ounces daily, for all other individuals.

Lately the proposition has been under consideration to further diminish the bread ration because of the serious doubt as to whether the old crop would be sufficient to last until the new harvest, grain from which may be expected to reach the market about the middle of November. I hope this course has not been deemed necessary because it would bring a great part of our people to the brink of starvation. The seven ounce ration is small enough; in fact it is the smallest I know of in any country in the world, including Germany.

The German bread ration, I have been told, was some months ago increased to 1,950 grams (69 ounces) per person per week, whereas the Swedish ration gives only 1,400 grams (50 ounces) to each person per week—or, in other words, the Swedish ration is 25 per cent less than the German.

It should be mentioned in this connection, however, that to those individuals among the Swedish working class who have especially hard work to perform, an extra allowance of flour is given, depending entirely on the occupation of the individual. In some cases—with his extra flour allowance—the Swedish workman gets nearly the same ration as the German civil workman.

Some time must elapse before the 1916-17 crop figures are available. With a satisfactory harvest and with a good potato crop this year it would have been possible to maintain the present bread ration during 1917-18, even though foreign grown grain was unavailable.

I am sorry to say, however, that there is no prospect today for a medium good grain harvest. Owing to unfavorable weather conditions during the fall of 1916 the sowing of winter wheat and rye was delayed, and the winter frosts found the plants small and delicate. This, taken in connection with unfavorable conditions during the winter and the severe frosts of April and May, caused a total failure of the winter rye in certain sections and a partial failure in other parts, and the entire crop, including the wheat, was very poor at the beginning of the summer. June and July brought a severe drouth spoiling the small remaining prospects of the winter grain and also greatly hindered the development of spring grain. I am sorry to state that today it can safely be said that both winter and spring grain will show a considerable shortage for 1917. The winter crop will be approximately 12,000,000 bushels below normal.

It will scarcely be possible to fill this shortage by a greater use of spring grain, because the spring crops are for the most part oats, barley, etc., and are unsuitable for bread making, being really fodder crops, and short at that, promising only enough food for livestock use during the winter, since the hay crop is also short and since imported fodder will be difficult to secure from abroad, if it can be secured at all.

In brief, the Swedish grain crop is about 12,000,000 bushels short of normal production. With an average crop it is necessary for us to import 12,000,000 bushels. Consequently, this year we will need 24,000,000 bushels of grain from abroad in order to have the same standard of living as before the war. Thanks to our government's foresight in introducing bread rationing in good time, we have saved about 12,000,000 bushels, or 30 per cent of the pre-war annual consumption of bread grains. We must, however, import 12,000,000 bushels of some sort of breadstuff during 1917-18 if we manage to maintain the present bread ration, which, as I have stated, is probably the smallest in the world, and is at least 25 per cent less than the German allowance.

Sweden particularly recognizes the value of the potato as a foodstuff of the greatest importance for man and beast. Our crop in 1913 was about 2,000,000 tons; in 1914, 1,700,000 tons; in 1915, 2,100,000 tons, but in 1916 we harvested only 1,500,000 tons of potatoes. During the war there has been no import or export trade in this commodity. As to the prospects of the potato crop I think

it would be safe to say that we might expect a medium crop and if the weather conditions continue to be favorable, it might even be a little better.

One other important nutriment is produced from Swedish soil; sugar, made from beets. The production of refined sugar amounted to 126,000 tons during 1913; in 1914 the output was 137,000 tons; in 1915, 143,000 tons, but in 1916, owing to decreased acreage and to inferior quality and quantity of the sugar beet crop, only 122,000 tons of refined sugar were produced. Because of the excellent 1914 and 1915 crops, Sweden was able to help her friend and neighbor Norway with 15,000 tons of sugar, the only sugar that has been exported during the war. Statistics show that there was a considerable increase in Swedish domestic consumption of sugar in 1915 and 1916. This was due to the fact that the government fixed a maximum sugar price, making it one of the cheapest nutriments on the market. The low price, however, had one great drawback, it brought about the reduction in acreage and lessened the cultivation of sugar beets. The decrease in sugar production during 1916, and the greatly increased sugar consumption, made the sugar situation rather serious in the latter part of 1916, which influenced the government to ration sugar in the following manner:

(1) Factories using sugar (including bakeries, chocolate, candy and soft drink factories), will receive about half the yearly quantity they had used during the previous two years.

(2) Each individual will receive 13 kilograms of sugar a year and in addition a small quantity will be allowed each household for preserving purposes.

In the foregoing I have given a short résumé of the Swedish situation in regard to bread and other starch-giving foods.

Hardly less important, however, is the fodder production on which depends the cattle raising industry. Our fodder crops are oats, barley and mixed grain, with certain quantities of straw and hay, which has never been sufficient to feed our livestock. Even before the war, it was necessary to import oil cake and corn in order to supplement the stocks of native grown fodder. Approximately 1,300,000 tons of oats are generally produced each year, with the exception of the 1914 crop, which was unusually short, 40 per cent below normal in fact, with the total production approximating 800,000 tons. Our barley crop is usually 300,000 tons annually, and we

produce about 350,000 tons of mixed grain each year. The hay crop, as a general thing, is between five and seven million tons annually.

Until 1916, the annual import of cotton seed cakes was 150,000 tons. That at least was the figure for 1913, 1914 and 1915. In 1916 this figure was reduced about one-half and in 1917 there was a still greater reduction. Corn was imported at the rate of 50,000 tons a year during 1913, 1914 and 1916. In 1915 this figure increased to more than 200,000 tons, which is accounted for by the unusually poor oat crop in Sweden during 1914 when the total yield was between 500,000 and 600,000 tons below normal.

As a consequence of cutting off almost entirely the importation of cotton seed cake and corn during 1916, and because of the poor 1917 fodder crop as well as the indifferent harvests of oats, barley, mixed grain and hay, it will be necessary in the near future to slaughter or export a considerable part of the nation's cattle and swine. It is hardly necessary to dwell on the enormity of a national calamity endangering the national production of meat, milk and butter, by being forced to kill off the country's livestock. Extensive stock killing will for the time being flood the market with more meat than can be consumed causing an overproduction of one kind of food, but in the end the cattle loss will be badly felt especially when the war is over and business tries to revert to pre-war conditions.

SWEDEN'S WAR TIME FOOD EXPORTS

Much misinformation has been published in the press and generally believed by the public, under the general subject of "Sweden is Feeding Germany." Only the other day I read that 5,000,000 bushels of wheat have been shipped from Sweden to Germany during the war. This statement, like most of the others I have read, is absolutely wrong.

It is a pleasurable duty to give the correct export figures to this American audience. During the war Sweden has exported the following quantities of wheat to Germany: 45 tons or 1,800 bushels in 1914; 30 tons or 1,200 bushels in 1915; 40 tons or 1,600 bushels in 1916 and during 1917, nothing at all. During the entire three years of war the total exports of wheat have been less than 5,000 bushels. Absolutely no rye has been exported from Sweden during the war.

Of Swedish oats, nearly 500,000 bushels were exported during

1916, but during the years 1914, 1915 and 1917 not a single pound has been exported. Just 180 tons of barley were exported during 1916—the only exports of any year during the war. No corn has been exported during the war.

About 1,200 tons of rolled oats and partly spoiled barley were exported to Germany during 1916, part of which was sent for the relief of the starving population of Lodz in Poland. Finally 2,200 tons of malt were exported to Germany during 1916.

All told there has been a total of 10,695 tons of grain and malt exported during the entire war. Of this amount the greater part was oats, and only an insignificant portion was wheat. Considering that Sweden's total yearly consumption of all sorts of grain amounts to 3,000,000 tons a year, which for the three years of war makes in round numbers, 9,000,000 tons, the total export during the entire war was about one-tenth of 1 per cent of Sweden's total grain consumption—certainly an insignificant amount. It is hardly necessary to state that at the present time, or during the present year, there can and will be no export of grain in any form from Sweden.

Regarding the situation concerning cattle, meat and dairy products, I must say, in times past Sweden used to export considerable quantities of oats, which, however, has ceased since the country began to raise cattle on a larger scale. Sweden had, at the beginning of this year, about 3,000,000 head of cattle. In 1913 we exported 42,000 animals; in 1914, 80,000; 1915, 36,000; 1916, 14,000. Broadly speaking, 1 per cent of the nation's entire cattle stock was customarily exported, except in 1914, when the oat crop dropped 40 per cent, approximately 3 per cent of the national stock being sold abroad. For years before the war, Germany and Denmark bought the greater portion of our export cattle.

The actual meat export figures for four years past are: 1913, 5,000 tons; 1914, 7,500; 1915, 11,700; 1916, 5,000. I must emphasize the point that this export business is not a war industry but existed long before the war. And also that shortage of food at home caused the trade to fall off considerably in 1916, and to diminish to virtually nothing this year. Pork exports before the war increased yearly. In 1913 we exported 8,000 tons of pork and in 1914 the pork exports increased to 15,000 tons. The 1915 exports totalled 19,000 tons and reached a maximum. In 1916 the export pork tonnage was 14,000, while at the present time all export of pork

from Sweden has ceased, and we are importing pork under a special arrangement from Denmark.

It is regrettable that Sweden has not been able to uphold the export of her pork to England during the war and that a greater part of it has gradually gone to Germany, especially in 1915. The natural and only explanation is that pork exporters, in order to get the high cost of production covered, chose the market that offered the best transportation facilities, the highest prices and the best conditions of payment, which conditions Germany undoubtedly fulfilled. Many efforts have been made to maintain the export of pork to England but these have all been in vain, as the prices offered and other conditions were too unfavorable.

Butter is one of Sweden's most important export articles and has been for many years. Before the war we exported about 20,000 tons annually. During 1914 and 1915 this amount decreased and in 1916 it had reached the low figure of 13,000 tons. During the present year all export of butter has ceased and Sweden is now *importing* butter from Denmark under special agreement. The same reasons given for the decline of English-Swedish pork trade and the turning of this business to German firms—also apply to the butter business.

The diminution of Sweden's butter exports is intimately connected with the cessation of Swedish production of margarine. Sweden manufactures and consumes, during normal years, about 30,000 tons of margarine, made principally from imported raw materials. The importation of fats and oils needed for margarine production ceased entirely during 1916.

Sweden had an important pre-war export trade in milk, cream and cheese. Denmark bought the milk, Germany the cream and Switzerland the cheese. During the war the export of these commodities gradually diminished and ceased altogether during 1917.

I would like to give you some figures showing what Sweden's meat export to Germany really meant to that country during the war. I say "meant" because such export, worth mentioning, does not exist any more. In 1915 Sweden's total export of all kinds of meat to Germany was only 28,400 tons. In 1916 the total amount was 20,000 tons. Both figures include pork and live cattle. Estimating Germany's population at 65,000,000, the export figures mentioned above indicate that each individual in Germany received

about 430 grams, or about one pound of meat and pork all told during the entire year 1915. In 1916 the corresponding figure was 310 grams or 11 ounces.

I hope the remarks I have had the opportunity of making before this distinguished audience will help to give an idea of the conditions in my country and of the grave problems Sweden is now facing. It is not only foodstuffs we lack, but also such articles as oil, coal, and many kinds of raw materials. The lack of lubricating oil, to take one example, will in a month or two put hundreds of thousands of Swedish workmen out of employment. It is to America, that we, like other countries, are looking for relief in our precarious situation.

I am a great believer in "give and take," and hate one-sided agreements. Today, money alone is not consideration enough for America's products, and Sweden offers in exchange for the American goods she so badly needs, such Swedish products as our good iron ore, our high grade steel, or wood pulp and other commodities, facilities and guarantees which are in our power to give.

The American government has taken into her own hands control of the export of American products. This means, I know, a square deal to everybody. It is a tremendous task this country has undertaken, and means virtually, the rationing of the greater part of the world—her allies as well as the neutral nations.

An organization to handle this immense job cannot be put into shape over night. It is only natural that America shall want to find out first what her own resources are, and then how much she needs for her own people and for the nations allied with her in this great war. And when these facts are ascertained she will know how far she will be able to satisfy the neutral countries dependent upon her.

That everything will be done to avoid unnecessary hardship and suffering in any of the neutral countries is the belief of everybody who knows the American people, their government, American ideals and what America stands for in this war.

SWITZERLAND AND THE AMERICAN FOOD SUPPLY

BY WILLIAM E. RAPPARD,

Professor at the University of Geneva, Switzerland, formerly of Harvard University;
Member of the International Red Cross Committee; Member of
the Swiss Mission to the United States.

THE ECONOMIC SITUATION

Nature seems to have predestined Switzerland to be a victim in a general European war.

Imagine a country smaller in size than Maryland and smaller in population than Massachusetts, surrounded on all sides by four great nations whose total population is about twice that of the United States. Imagine two of these surrounding nations at war with the two others. Imagine a country whose moist climate and high average altitude prevent it from raising more than a fifth of the cereal foodstuffs necessary for the consumption of its population, a population about equal in point of density to that of Connecticut. Imagine a highly industrialized country without any mineral resources nor any outlet to the sea. Imagine all these conflicting circumstances and you will have a true picture of the economic situation of Switzerland.

In the last few years before the war Switzerland was in the habit of importing from 50 to 75 per cent of her foreign wheat from Russia and Roumania; Canada, the United States, and Argentina supplying most of the rest. Coal, of which her soil is absolutely barren, she drew mostly from Germany. This empire alone supplied her with more than 80 per cent of her needs, less than 10 per cent being imported from France and still less from Belgium. As for pig iron, all of which we were obliged to import also, about 55 per cent of it came from Germany, 30 per cent from France and the rest from England, Austria, and Sweden. In normal times about three-fourths in value of our annual imports consisted of foodstuffs and raw materials and about three-fourths of the value of our annual exports were represented by manufactured articles.

In times of peace, the economic interdependence of nations is justly regarded as a very natural and mutually advantageous consequence of the international division of labor. But in times of war,

as we have learned at our expense, economic interdependence means economic dependence of the small on the large states, and nothing can be more threatening for the political independence of small states than economic dependence on their large neighbors.

Since 1914 Switzerland has become entirely dependent on the allies in general and on the United States in particular for many essential commodities, the most important of which is grain. On the other hand, Switzerland has become equally dependent on the central powers in general and on Germany in particular for equally essential commodities, the most important of which are coal, iron, chemical fertilizers and potatoes.

That the central powers should not supply us gratuitously with coal and iron is as natural, as it is natural that the allies should not allow us to pay for them with the foods stuff they export to us. Nor it is surprising that the central powers should forbid the reexportation to the allies of the coal and iron we receive from them.

On the other hand, the considerable tourist traffic, which formerly helped us to balance our foreign trade account, has become negligible as a result of the war. Consequently we today have to rely almost exclusively on the products of our grazing and manufacturing industries as payment for our imports of foodstuffs and raw materials.

The allies have further so far restricted our exports of Swiss raised cattle and dairy products to the central powers that they have become insignificant as compared with the needs and resources of those powers and insufficient to pay for our imports. Hence the recent credit arrangement between Switzerland and Germany, according to which we have been obliged to loan Germany \$4,000,000 for every 200,000 tons of coal we receive from her.

The allies have recognized that our economic relations with the central powers have been limited as far as is compatible with the necessities of our national existence. In order to live, we must import some cereal foodstuffs from the allies and export some products of our grazing industry to the central powers; that is the price exacted for the coal and iron which no one but they can furnish us. To deny us the right to import or to make it dependent upon our refusal to export would, therefore, be to deny us the right to live.

Stated in these simple terms, the problem involved is susceptible of but one solution at the hands of a nation and of a government which have always been noted for their spirit of fair play and for their generosity toward small countries.

THE POLITICAL SITUATION

So much for the economics of the Swiss situation. Let us now briefly examine its political aspect.

The Swiss nation, although one of the smallest in the world, is made up of peoples of different tongues, of different races, and of different creeds. About two-thirds of the population speak a Germanic dialect, about a quarter speak French and the rest Italian. I may here remark parenthetically that although German is the written language in the German parts of Switzerland, the spoken dialect, somewhat resembling the Alsatian, is so distinctive that it is not understood by the average German. The national problem arising out of the diversities of the Swiss nation has hitherto been successfully solved through the strict observance of three great principles—democracy, federalism (what you would call the principle of states' rights or of local autonomy) and neutrality.

Switzerland was born at the close of the thirteenth century as a democratic republic and, in spite of some attempts at political reaction, she has always remained true to her democratic ideal. The initiative and the referendum, which she has devised in the course of the last century and which have since been imitated in this country, are but the most recent symptoms of a political spirit which is as old as the country itself.

Until 1798 Switzerland had been a loose confederation of sovereign states. Then suddenly she became a highly centralized republic, after the French revolutionary pattern. Neither system proved satisfactory. In 1800 Napoleon Bonaparte urged Switzerland to adopt the American form of federal government. This was finally done in 1848. In the meantime several Swiss authors, and particularly James Fazy, a Geneva statesman who had been a warm friend of Lafayette, had carefully studied and strongly recommended the imitation of American institutions. The happy balancing of the rights of the constituent states represented in one house of Congress, and of the rights of the nation at large represented in the other, is, almost as much as the democracy itself, one of the secrets

of Switzerland's internal peace. We have not forgotten and we shall never forget that we owe it to the example of your country.

The third cardinal principle of Swiss political life is neutrality. This also is well-nigh as old as the country itself. It was practiced in an imperfect manner as far back as the beginning of the sixteenth century. It saved Switzerland from ruin during the Thirty Years' War in the seventeenth century and during the wars of Louis XIV in the early part of the eighteenth century. It was given its present form at the Congress at Paris in 1815 when France, Great Britain, Russia, Portugal, Prussia and Austria, recognizing "the neutrality and inviolability of Switzerland and her independence of all foreign influence to be in the true interests of the policy of the whole of Europe," solemnly vowed forever to respect them.

The neutrality of Switzerland is, unlike many other neutralities, no provisional and opportunist political attitude. It is a fundamental principle of our national life, a condition both of our external independence and of our internal peace. Our federal Constitution, defining the duties of the Federal Council, our national executive, makes it equally incumbent upon it to defend "the independence and the neutrality" of the country. At the beginning of the present war all our belligerent neighbors renewed the assurance of their fidelity to their treaty obligations and our government renewed the assurance of our absolute and unconditional will and duty to defend our neutrality against all possible aggressors. Since the beginning of August, 1914, our army has been continuously guarding our frontiers. The cost to date is approximately \$150,000,000, a sum which means as much to a population of 3,500,000 inhabitants as about \$4,500,000,000 would mean to the people of the United States. It is a very heavy burden. But we deem no exertion too strenuous, no privation too trying, no sacrifice too great, when the sanctity of our word of honor and the independence of our country are at stake. Such are the foundations of our political existence. They have thus far withstood all shocks from without and from within.

Ever since the beginning of the war the French and Italian speaking element of our population have ardently hoped and wished for the triumph of the allies. In those parts of the country where the German-Swiss dialect is spoken, our people were divided. An unbounded admiration for German efficiency, an exaggerated faith in the German version of the origins of the war, unfortunate illusions

about the degeneracy of France, about the imperialism of Great Britain and about the menace of Czarism caused many of our fellow-citizens to lose sight of the deeper moral significance of the present struggle. But today the violation of the Belgian neutrality and the admirable resistance of that noble people, the terroristic methods of German warfare and the magnificent reaction of unprepared and pacific France, the Russian revolution and the entrance of the United States into the war, have cleared the issues. Today the great mass of our people have, with regard to the principles at stake and to their champions on the fields of battle, such feelings of hope and gratitude as become the citizens of the oldest democratic republic in the world.

In her efforts to hold and to gain the sympathies of Switzerland, Germany has used two tools, one intellectual and the other economic. The first has failed her. A bad cause poorly defended; such is the Swiss opinion of the German propaganda. With the other tool Germany has been much more fortunate. In spite of our adverse feelings, or perhaps on account of them, she has been almost generous toward us. Burning exclusively German coal, the Swiss people suffered less from last winter's cold than the German people themselves. Last year three-fourths of our imported potatoes were furnished us by Germany. Our own crop had failed and this spring, when we were in dire need of potato seeds, Germany, in spite of her own shortage, supplied us liberally with them.

When rumors of the threatening American embargo on food for neutrals reached Europe, rumors which doubtless provoked still more rejoicing in Berlin than anxiety in Berne, it was intimated from certain quarters that if the allies failed us we might perhaps rely on Germany even for some of our cereal foodstuffs.

One may be assured that in her present moral isolation, there are few economic sacrifices which Germany would not make, if they were productive of real political advantages.

Fortunately the allies have also treated us fairly thus far. The allurements of interested German generosity have, therefore, not been too effective. But they are dangerous and they might become fatal for our people if we were not certain of your people's and of your government's sympathetic interest and support.

CONCLUSION

In his memorable farewell address, Washington said in 1795:

There can be no greater error than to expect or calculate upon real favors from nation to nation. 'Tis an illusion which experience must cure, which a just pride ought to discard.

This wise utterance is perhaps less absolutely true today than it was at the end of the eighteenth century. Still we should not dare to solicit any favors from this country, if we were not convinced that by granting them your government was effectively serving your own cause.

The United States government has it in its power to save Switzerland or to ruin her. For America to save Switzerland in the present crisis is to clear the way for the realization of the American peace idea, by convincing the most hardened of skeptics and cynics abroad of the absolute sincerity of its democratic inspiration. For America to let Switzerland perish or to allow her to be saved through the shrewd and calculating generosity of the German autocracy, would be to abandon the most ancient and the firmest foothold of liberal and federative democracy on the continent of Europe. Could anything more hopelessly obscure the fundamental issue of this war, undertaken by the United States to realize that state of political fellowship between peoples of different tongues and races, of which Switzerland is perhaps the most perfect prototype in the world?

And, on the other hand, could anything more gloriously and more persuasively show the German people the true intentions of the American government and the true obstacle to lasting peace, than a fair and generous treatment of that country which at their doors, is for friends and foes of democracy alike, the very embodiment of the democratic idea?

A public statement of this policy and of its justification from the American point of view, coming from this country and reëchoed into Germany through the thousand channels of our press, would be more than a convincing argument. It would be a demonstration. We know that America will save Switzerland, because we know that it is America's wish and will that the government of the people, by the people, and for the people perish not from any part of the earth, but that it prevail throughout all civilized mankind!

STATISTICAL APPENDIX

The following five tables illustrate Switzerland's economic dependence on the two hostile groups of belligerents for five of the most vital commodities. Unless otherwise specified, the figures given are in thousands of metrical tons. The total imports of each commodity as indicated often exceed the sums of the imports from the various countries, as only the most important of the exporting countries are mentioned.

IMPORTS OF COAL

<i>From</i>	1911	1912	1913	1914	1915	1916
Germany	2,467	2,615	2,845	2,730	3,032	2,730
Austria	9	11	7	12	2	13
France	393	322	325	202	12	9
Belgium	206	188	147	93	251	396
Holland	17	25	17	35	13	..
England	41	28	32	32	1	1
United States	..	6	6	..	..	..
Total	3,133	3,195	3,379	3,105	3,311	3,149

IMPORTS OF PIG IRON

<i>From</i>	1911	1912	1913	1914	1915	1916
Germany	656	785	707	553	997	637
Austria	9	12	7	45	129	6
France	348	392	364	242	5	20
Belgium	14	19	7	..	..	..
England	..	158	139	107	35	111
Sweden	8	8	5	6	121	92
United States	..	..	..	..	..	47
Total	1,165	1,374	1,229	953	1,287	913

IMPORTS OF POTATOES

<i>From</i>	1911	1912	1913	1914	1915	1916
Germany	48	48	68	21	22	59
France	10	19	8	4	4	..
Italy	8	11	14	43	..	6
Austria	9	3	2	1	..	..
Holland	1	..	..	60	3	11
Total	80	85	94	133	30	78

IMPORTS OF WHEAT

<i>From</i>	1911	1912	1913	1914	1915	1916
Russia	220	203	186	167	17	..
Roumania	102	141	50	11	..	..
Canada	46	55	80	60	..	..
Argentina	12	13	33	18	7	58
United States	24	33	151	168	458	540
Total	439	486	529	441	482	598

IMPORTS OF RAW COTTON

<i>From</i>	1911	1912	1913	1914	1915	1916
United States	14	15	16	9	17	16
Egypt	9	10	10	11	14	10
British India	1	1	1	1	1	1
Total	24	26	27	21	32	27

These five tables show that Switzerland could no more do without German coal, iron and potatoes—the same is true of several other commodities, notably the various kinds of drugs and fertilizers—than she could do without American wheat or cotton.

It will be noticed that in 1916, Switzerland actually imported more wheat than in the years before the war. In order to avoid any possible misinterpretation, it must here be repeated that ever since 1914 no wheat nor other grain has been exported from Switzerland to the central powers, except in the shape of strictly limited quantities of bread destined for the allied prisoners interned in Germany and for the Swiss citizens resident there. These exports, authorized, controlled, and encouraged by the allies, have never profited any of their enemies.

Unhappily for Switzerland, these excess imports of wheat in 1916 have been more than compensated by the deficiency of the imports of almost all other commodities and notably of almost all other foodstuffs as the following table shows:

GENERAL IMPORTS

<i>Commodities</i>	<i>Annual Average 1910-1913</i>	<i>Total 1916</i>	<i>From United States 1916</i>
Oats	180	96	49
Malt	54	19	12
Rye	19	1	1
Flour	45	4	..
Macaroni paste	23	..	..
Potatoes	95	78	..
Fresh vegetables	56	25	..
Beans and peas	8	4	..
Eggs	14	3	..
Butter	5	..	..
Poultry	5	2	..
Fresh meat	13	1	..
Preserved meat	3	1	1
Hay	51	1	..
Bran	13	4	4
Flour for cattle	53	..	..
Rupe cakes and carob bean	32	27	..
Petroleum	65	34	12
	<i>(in thousands of head)</i>		
Bovine cattle	86	3	..
Swine	65	37	..
Sheep	116	1	..

THE CASE FOR HOLLAND

BY A. G. A. VAN EELDE,

Member of the Netherlands Mission to the United States.

On July 31, 1914, Holland began mobilizing its army and navy, subsequently set to increasing and equipping them, and now maintains on a war footing about half a million of men. It acted thus, not with a view to join the cause of either of the belligerents, but to be in a position to ward off any hostile attempt on the integrity of its territory, home and abroad. It publicly declared its firm determination to remain neutral.

The number of those criticizing this line of conduct was of no consequence in Holland, but rather extensive abroad. It was, the latter averred, inconsistent with the policy of Holland as chronicled in history and not conformable to the spirit of the nation, which

was well known to be liberty-loving and anti-militaristic. Before long, however, the dissenting voices became faint and less numerous. The opinion began to prevail that intervention of Holland in the war could only be done at a ruinous cost to itself, would be of no material advantage to anybody and unlikely to promote justice, until, at the present moment, all open-minded critics admit the wisdom of Holland's decision to stand aloof, showing a bold face on all sides; on the one hand ready to severely punish all comers who were evilly affected, on the other to extend its alleviating hands to the sufferers of all nations.

Those, however, who think that Holland, acting as it does, has a chance of coming off with a whole skin, are under a misapprehension. What with the upkeep of an abnormally sized army, the housing and boarding of thousands and thousands of interned soldiers and refugees, what with the government distribution of foodstuffs and other commodities to its population at prices far below the absurdly enhanced cost prices, Holland is compelled to raise loans and taxes of unprecedented magnitude.

The ever increasing difficulties and dangers at sea seriously threaten its mercantile and fishing fleets. For, were it not for the undaunted determination of its sailors and fishermen who never flinch no matter what perils are impending over them, the supplies of indispensable victuals would have run out long since. As it is, supplies are scanty. All Holland is clamoring for more bread and fuel, farmers are crying out for fertilizers, stock owners for feeding stuffs, manufacturers for coal and raw materials. For Holland is not a self-supporting country in the actual sense of the word.

Formerly, when means of conveyance were limited to the efforts of human and animal physical power, Holland derived its necessities of life mainly from its own soil. On the victorious entrance, however, of the steam engine, transport—especially marine transport—became swift, cheap and reliable. The Dutch farmer realized that cereals could be grown in America and landed in his own country at less cost than he could raise them at home; he stopped tilling the soil, promptly turned his arable lands into grasslands and applied himself to cattle raising, his efforts resulting in the creation of a cattle breed, justly renowned all the world over—not the least in the United States—for its milk producing qualities.

The manufacturer, in the meantime, kept pace with the farmer.

He left to others the providing of articles which could be landed more cheaply from elsewhere, and limited himself to the manufacture of such articles best adapted to the conditions of his country, importing his raw materials from abroad.

Thus it came to pass that Holland, like England and like England alone, became a free trading country, producing what it is best adapted to produce, depending for most of its cereals, fuel and raw materials on the available surplus production in other countries imported into Holland practically duty free.

Only one-fourth of the total amount of wheat and rye needed for bread for the population of Holland and the multitude of its guests, grows on Dutch soil. The balance used to be imported from the Baltic provinces, from the Black Sea provinces and from America. The two former sources being cut off immediately after war broke out, stocks of wheat and rye began to fall dangerously low in Holland in August and September of 1914, causing the government to step in and to establish an organization of its own for the purchase, the transportation and home distribution of said cereals. The government reckoning and—as subsequent events proved—not in vain, on the farmers of its old friend of long tried standing, the United States, was enabled to realize its designs, avert the threatening bread scare and to create a sense of security. Bread, howsoever, was procurable in diminished rations only.

The sense of security following upon this action of the government was not confined to Holland alone. It spread to Belgium and to the north of France. The American Commission for the Relief of Belgium in its untiring efforts to supply the needful to millions of indigent men, women and children—a gigantic self-constituted task—once in a while ran up against the vicissitudes of fate and found itself short of provisions. Self praise is no recommendation, but the Belgian Relief Commission will bear witness to the fact that, in such times of emergency, the Holland government was ever willing to open the doors of its storerooms, thereby releasing the anxiety of the Commission and its crowd of famine threatened clients. On those occasions the people of Holland, without exception, stood by its government.

Of late, however, things are shaping differently. The United States, hitherto a neutral, joined the belligerents and was compelled, so as to protect the interests of self and allies, to stop the

exportation of sundry commodities, among them cereals, pending the result of stock taking. Subsequently the sense of security in Holland, in Belgium and in the north of France is giving place to a feeling of unrest. What between the alarming news that no more grain-laden ships are to be expected in the ports of Holland within measurable time, and the prospect of the importation of the precious cereals being stopped altogether, once more the fear of an approaching bread scare is looming up in the minds of the people of Holland, of Belgium and of such portions of France as are occupied today by the Germans. Bread rations in Holland have been reduced from .88 of a pound to .56 of a pound per day.

The importation of fertilizers and feeding stuffs, although a matter of second consideration in comparison with wheat and rye, is of vital importance to Holland. Lack of fertilizers would preclude farmers and cattle breeders from turning their grasslands to account in summer, while want of feeding stuffs would render the upkeep of cattle in winter time well nigh an impossibility. Cessation of importation would therefore be almost on a par with a national calamity; it would involve the immediate slaughtering of roughly half a million cattle, half a million pigs and half a million sheep; it would put a stop to all exportation, to allies and centrals alike, involving dearth of fuel and raw industrial materials, which Holland is in the habit of exchanging against its surplus production. Deprived of the means for carrying on such interchange, in other words thrown exclusively on its own resources, Holland might be able to drag on its existence, but only at an excessive cost and risk. Nearly a million of its inhabitants, about one-seventh of its population, would have to walk the streets unemployed. Lately, rumors are afloat giving rise to the belief that the already materially reduced importation of fertilizers and feeding stuffs will be caused to stop altogether. Holland, realizing the far-reaching consequences of such a contingency, is anxiously watching coming events.

It is a duty incumbent on every nation to pass in review, from time to time, its conduct in the past; especially so, after a period of three years of warfare, now elapsed. Holland can set out for the performance of this duty with a clear conscience, fully confiding in the honesty of its purpose and the wisdom of its leaders chosen through the medium of its democratic institutions.

At the opening of the war it took up its stand as a neutral

power, a position criticized at first by some, later on admitted as being correct by all but a few. It has since acted up to its obligations, playing a fair and open game with everybody, honestly endeavoring to apply the same standard to all belligerents.

It has suffered, and is still suffering, but it strongly feels the unbecomingness of accentuating its own burdens while millions of fellowmen are sacrificing their all, and therefore Holland abstains from doing so. At the same time there must be no misunderstanding. If a man has a clear conscience, he has evidently a clear case, and is entitled to a respectful hearing and an impartial judgment.

The case for Holland is a clear one. She expects with confidence unbiased treatment.

INTRODUCTORY

BY THE HONORABLE ROLAND S. MORRIS,

American Ambassador to Japan.

"From war, pestilence and famine—Good Lord deliver us," has been the pleading prayer of mankind through countless generations. As Mr. Ralph A. Graves tells in a recent article, "Grim, gaunt and loathsome like the three fateful sisters of Greek mythology, war, famine and pestilence have decreed untimely death for the hosts of the earth since the beginning of time." For over three years we have increasingly felt the baneful influence of an all but world-wide war. Soberly, earnestly and with no selfish principle, but with undaunted determination, our own country has entered this war to make certain that human liberty "shall not perish from the earth." To this cause we have dedicated without reservation our manhood, our national wealth and our individual energies. But what of pestilence and famine with which human experience has linked war in its trinity of evils?

Modern science has grappled with pestilence and has thus far gained a victory which it seems to me must rank among the greatest achievements of the human intellect. Just consider it a moment. For three years millions of men have been herded together under conditions of living impossible adequately to picture, have been shot to pieces by bullets, shattered by shrapnel and shell, seared by liquid fire and suffocated by poisonous gases, have existed in narrow cramping trenches at times withered by an almost tropical sun, at others chilled to the marrow by a biting arctic wind, and yet thus far have been mercifully spared from the added horrors of that spectre of pestilence which for ages has haunted the imagination of mankind. As we think on these things may we not reverently bow our heads in gratitude to those heroic pioneers of science who in the past have again and again given their all that mankind might know the secrets of disease and also to that noble army of doctors (some from our own city) who tonight are holding at bay the ever impending spectre of pestilence which constantly threatens that far flung battle line in Europe.

And famine? Yes, it too threatens the world, and we are here tonight to take counsel once more how this third evil may be averted. To the United States of America more than to any other of the allies this question comes with impelling force. We have ever held that this vast, fertile land developed by the vision and energy of our liberty-loving pioneers is a sacred trust to be administered for the benefit of mankind—and when the test came and our President asked us, "Are you ready now that liberty is threatened and our brothers call to make good the unselfish professions of a century," the answer came in one great chorus from every corner of our land "We are ready."

It is because of this reponse that the wealth of our favored land and the manhood of our nation is now dedicated in one supreme effort to curb forever that spirit of aggression which threatens the right of every liberty-loving nation to develop its own traditions and conserve its own national life.

We have one great contribution to make to this great task. We must conserve so that we may give freely of our food resources to our allies and thus meet their pressing needs. How this may best be done has been the central theme of the conference now drawing to its close and we are fortunate to have with us distinguished representatives of our allies who are here to add their vital word to this discussion. Our fertile fields, our natural resources, our comparatively small population, have all tended I fear to make us an extravagant nation. No necessity up to this moment has forced us to give due thought to the needs of economy and conservation. The problem is a new one to us. We must learn the lesson, and where could we better first turn for instruction than to that island Empire with its experience of thousands of years, which has learned through that experience to overcome the limitations which nature has imposed upon it, and through economy and thrift, by the use of every square foot of available land, and by the saving of every ounce of product has reared a great Empire, developed a far-reaching civilization and given to the world an art and a literature which has made a profound impression on the standards of every other nation.

HOW JAPAN MEETS ITS FOOD PROBLEM

BY HIS EXCELLENCY, VISCOUNT KIKUJIRO ISHII,

Ambassador of Japan on Special Mission.

I am embarrassed by the honor you have done me in thus inviting me into a discussion interesting and of great value to all the world, but in which my part must be little more than a digression. Nevertheless, it would be unbecoming in me should I fail to avail myself of your courtesy and make an effort to inject some remarks which may perhaps throw light upon a situation and a condition foreign to the surroundings in which I find myself. As a representative of my Emperor and my countrymen, I came to tell the government and the people of the United States in all sincerity and earnestness that in this great and fearsome struggle in which we are all engaged, the East and the West must meet and labor together for the benefit of humanity, and that Japan is prepared to save and sacrifice more in order that as a nation she may live. We in Japan have not been idle during the heat of the day so far. In our own small way we have endeavored to do and we believe have done our best as we saw what we had to do. But we do not underestimate the further task before us and we realize that the future may demand further self-sacrifice and conservation of our resources—all for the common good in coöperation with our allies.

We have had special opportunity for the last month to see something of the vast machinery and resources at the command of the United States and to realize how much from its surplus there is to spare and how much can be conserved as the time of stress continues. America has lived in magnificent luxury. America has had at its command food and raw material undreamed of in Japan. Indeed you have little idea how small is the margin between plenty and want in the country from which I come or how great has been our sacrifice to the cause of national existence.

I have noticed while I have been here discussions in the magazines and newspaper press of this country on "the vast increasing wealth of Japan." I am inclined to think that these publicists really know but little of the subject with which they deal. In comparison with yours the so-called "wealth of Japan" sinks into insignificance. The food problem with us is not serious but is

solved by frugality. It is true that our people are not in want, because their requirements are limited to the barest necessities of life. We have a very small area of food-producing country from which to draw, and by necessity every bit of it is most intensively cultivated. The food of our people consists mainly of vegetables, rice, roots and barley grown in the valleys and upon the hillsides where irrigation can be made effective, and of the fish that are drawn from the seas which surround us.

I will not venture too far into statistics for that might be dangerous, but I am convinced you would be startled if I should show the cost of living in Japan compared with the present cost of living in America. Even you, with your great store of information, would be astonished if I compared the bulk of our national wealth with the bulk of the national wealth of the United States. A comparison of figures for 1913 shows that this great city of Philadelphia—the ninth in point of importance in the world—has an annual industrial output double the total industrial output of the whole state of Japan. The United States has a population approximating 100,000,000 and Japan has a population approximating 60,000,000. Japan's area is considerably smaller than that of the state of Texas. This alone must open to you a field for consideration of Japan and a ready answer when you are asked why Japan does not contribute more to the war in Europe.

It is only ten years since we engaged in what then was a great struggle for a national existence. The figures representing our national resources and our national debt today are very large indeed compared with the facts of our resources and indebtedness then. In order to protect our nation and our people, to preserve that individuality as a nation which all the allied nations are striving for today, a call for self-denial on the part of our people and for a frugality of which some people have even now little conception is necessary. The burden laid upon our people is still being patiently and patriotically borne. For the last ten years I can safely say that the self-sacrifice and the saving of the great mass of people of Japan has been a splendid tribute to the virtue and value of patriotism, a patriotism so abundantly exhibited in the allied countries today. We were prepared then and we are prepared now to save and to sacrifice in the matter of foodstuffs as in all else, in order to conserve our national forces and unite in preserving for humanity an individual right to freedom and to liberty.

In the year 1868 the total export and import trade of Japan amounted to a little more than \$13,000,000. In 1877 it amounted to \$25,000,000 and in the year 1913, the last normal year of trade, it amounted to about \$600,000,000. I am glad to say, and I think it is a significant fact to relate here to you, that of this total Japan has done more business with the United States than she has with any other country in the world—a condition which is emphasized more in these abnormal times than it was during the normal. Our trade with the United States in 1913 amounted to about 30 per cent of our total foreign trade. I am giving you figures, not as presuming to inform you, but in order that I may emphasize and you may consider the resources of Japan when you estimate the share we should bear in the future of the food distribution.

Permit me to offer you again, and perhaps to bore you with, a further statement which may be illustrative of the resources of our country at a time when we are called upon to contribute men, money and material to the winning of this war. In 1877 the total annual state revenue of Japan was a little under \$30,000,000, and in 1913 the total annual state revenue of Japan was a little under \$300,000,000, not a very large sum in the face of the thousands of millions you can spare.

Additional figures may again help you to understand to what extent we are obliged to impose upon our people a frugality which is borne with a due sense of responsibility by the individual to the state. In the year immediately preceding the great struggle for our national existence, the amount of national debt outstanding was a little more than \$220,000,000. In the year immediately following peace it was a little over \$2,000,000,000. Today our taxes are very heavy indeed; proportionately as heavy, I find, as those imposed recently on the people of this country.

I have finished with figures, and have only injected them to give a comparative idea of resources. A like proportion would apply to the earning capacity of the laboring classes and the margin to spare from their earnings. I assure you that until we realize the enormous difference in the cost of living in Japan and the United States, that comparison with the earnings of your people is staggering.

Now you will certainly agree with me that national economy—which is represented by the frugality of the great mass of the people

and not by lavish expenditure of a few individuals—is as essential to the life of a nation as is economy to the existence or the credit of a firm or individual. Also you will agree with me that the figures representing the business of a nation, firm or individual, during these abnormal times, should not be taken into consideration or into estimation as the normal resources on which such states or individuals may base their present estimates for future years.

The independence of a nation as the independence of an individual is measured by income, expenditure and indebtedness. Our credit has been created by a frugality of living and a sacrifice of the individual to the state in order that the state, the nation and the individual may survive. We are endeavoring to conserve that credit so as to insure our independence. At the same time we are expending, and we are ready to expend funds drawn from a frugal people in a cause which means to us the same as it means to you—a free independent life for the nation and for the individual.

FOOD FOR FRANCE AND ITS PUBLIC CONTROL

BY FRANCOIS MONOD,

"Chef de Cabinet to the French High Commissioner in the United States.

Without attempting to present a complete and authoritative review of the conditions prevailing in France as regards the food question, I think it may be worth while to state here at least some of the main facts or figures evidencing the difficulties with which France has had and is having to contend during the war in order to supply the needs of her civilian population and of her armies.

Emphasizing first the decrease of production and the increase in prices, I will thereafter outline the main measures taken in France in order either to make up for the shortage of agricultural workers or to regulate consumption, to remedy the deficiency of production and to provide a sufficiency of the essential foodstuffs.

I. SHORTAGE OF AGRICULTURAL HANDWORK AND DEFICIT OF NATIVE PRODUCTION

1. In France during the war the whole food situation has been controlled by an extensive and critical shortage of agricultural handwork. Obvious are the reasons accounting for that main fact of the situation. Seven million men up to the age of forty-eight years have been taken in France for army service. It would be difficult to overstate the consequences of such a wholesale mobilization of our manhood amongst a nation which has been for centuries and which is still foremost a nation of agriculturists, of food producers. Though accurate statistical data are not easily procurable, I think that a round figure and safe estimate of the number of agriculturists in the French army during the war would not prove to be under four or five million men. This includes without exception all the younger and stronger male peasantry.

Then there is to be taken into account the invasion and long detention of a large part of northern France by the Germans which means the loss, during the war, up to the present day, of some of our best managed and most productive wheat growing districts, and the enforced employment of their agricultural resources and handwork for the benefit of Germany.

South of the invaded districts along the front in the "army zone," that a large acreage of agricultural soil is lying uncultivated and idle is another fact not to be overlooked. Wheat is not grown on a shell-torn ground and the main crops of that long belt from the French Flanders to the south part of the Vosges, to the border of Switzerland, are barbed wire. The varying breadth of that belt, extending far behind the actual "no man's land," is easily several miles.

Then there is to be mentioned last, a deficiency of the essential fertilizers all over France. The import of nitrates is cut short by the growing contraction of available tonnage and by the scarcity of shipping from the far distant sources of supply in Chile.

2. A heavy decrease of production has unavoidably been following such unsatisfactory conditions of cultivation. Wheat has ever been the staple food of France. Amongst all classes over the country bread is the main article of consumption, the actual

basis of the French nation's feeding, even more so especially in the case of our peasants, that is to say of the majority of the nation with whom bread actually takes to the largest extent the place of meat as a foodstuff.

In peace times the wheat production of France was about equal to our consumption, sometimes slightly inferior to our needs, sometimes slightly superior and allowing a thin margin of surplus. This meant a crop of about 90,000,000 French cwt.¹ on the average. Since the war, production decreased to:

82,000,000 French cwt. in 1914
75,000,000 French cwt. in 1915
58,000,000 French cwt. in 1916.
38,000,000 French cwt. in 1917 (estimate)

Thus, compared with the normal production, the present wheat production of France indicates a decrease of over 50 per cent in the native supply of the staple food.

As regards *meat* the unavoidable depletion of our resources in livestock has been made much heavier by the huge needs of the army. In the army the meat consumption per head amounts to about 400 "grammes," a little less than one English pound, a day. This means an exceedingly heavy additional burden on our resources in livestock on account not only of the tremendous consumption of meat at such a rate in an army of several million men, but on account of the fact that the peasants, contributing the largest part of the army's establishment are, as already stated, consuming very little meat in peace time.

In round figures the decrease of the livestock in France since the end of 1913 runs as follows:

End 1913 14,787,000 bovine species
End 1913 16,138,000 ovine species
End 1913 7,035,000 pigs
End 1916 12,341,000 bovine species
End 1916 10,845,000 ovine species
End 1916 4,361,000 pigs

meaning thus, at the end of 1916, a decrease of about:

2,440,000 bovine species
5,700,000 ovine species
2,700,000 pigs

¹ French cwt. = 220 English pounds.

II. INCREASE IN THE PRICES OF FOODSTUFFS

1. The increase in price for *wheat* has been balancing almost exactly the decrease in production.

Average Price of Native Wheat

Before the war	22 francs per French cwt.
1914	30 francs per French cwt.
1915	36 francs per French cwt.
1916	50 francs per French cwt.

which means in 1916 an increase of *over 50 per cent.*

2. The price of meat has been rising in a similar proportion and an *increase of circa 50 per cent* may safely be stated as an index for the rising in the prices of *all the main foodstuffs.*

3. The price of *bread* though shows a comparatively small increase. The peacetime price was 35-40 centimes per kilogram on the average; the war price did not rise over 50 centimes. The explanation of such a paradoxical fact is that the price of bread was artificially and deliberately kept down by the government burdening public finances with a heavy extra war burden. On account of the paramount importance of the question of bread, the French government adopted the policy of paying from public moneys the difference between the prices corresponding to the actual market quotations of wheat and the price of bread as stated above (50 centimes). Thus a steady, abnormal and uncontrollable increase of wages amongst the community at large and other undesirable results which would have followed as regards the price of bread were avoided.

III. SKETCH OF THE PUBLIC MEASURES TAKEN TO CONTROL THE FOOD SITUATION

Important public measures have been taken to make up for the deficiency of agricultural handwork, to regulate or to lessen consumption and to provide supplies.

1. All over France private initiative amongst the agricultural community did wonders in order to keep the production as large as possible. All the people who were not in the army, the old men, the women, the boys under military age displayed great physical and moral courage in taking, as regards agricultural work, the place of the millions of men at the front. They directed the work—

many women have themselves been running even large-sized farms during the war—or they spent themselves tirelessly in the manual work involved by the daily business of farming; they took care of the cattle, of the horses; they performed ably the ploughing, seeding, harvesting operations.

Under such trying conditions they went on with the cultivation of the fields as far as possible even in the zone behind the actual front, many times in shelled districts. Near villages located behind the trench line I have often seen women or old men, bent in two, weeding or hoeing without taking notice of the casual landing of shells in the near fields.

2. This strenuous endeavor has been helped and stimulated by special organizations created under the authority of the Ministry of Agriculture.

Under the supervision of the communal authorities and with the help of the local agents of the Ministry of Agriculture, a special local coöperation was organized in the rural townships, bringing about a local pooling of agricultural resources of machinery, draught horses, seeds and of handwork to some extent.

Special military measures, besides, were taken for the same purpose. A certain amount of supplementary agricultural handwork was provided in two ways: first, by granting, as far as possible long furloughs to soldiers of the older "classes," and second, of late, by the release of the 1889 and 1890 "classes," aged forty-seven and forty-eight years. Another kind of military coöperation was extended in the army zone itself in the villages located behind the line, by the temporary use of smaller groups of soldiers and of army horses in agricultural work, helping the peasants on the spot and reclaiming part of the fields left idle since the war began.

Then the German army herself contributed another welcome addition of handwork—mobile squads of German prisoners put at the disposal of many of our rural communities have been fairly extensively employed by our peasants in various districts. They were well treated and well fed and the results proved satisfactory. Provided they are kept under a sufficiently strict military discipline, the German prisoners are submissive and willing to work.

Last, another addition of hands was offered by importing natives volunteering from Algeria. The Kabyles, one of the main

ances of French Northern Africa, are sedentary peasants. For months squads of turbaned Kabyles have been seen with us, employed not only as street sweepers in Paris, but in several rural districts, mixing unexpectedly as agricultural laborers with the old peasantry of France.

3. So much as regards handwork and cultivation. Regarding the regulation of consumption and the victualling, the most important public provision has been the buying of all wheat imports by the French government. This resulted in regulating automatically the prices of the native wheat and in preventing speculation in the interior market.

Since December, 1916, this organization has been extended and completed by the creation of a national Ministry of Supplies (Ministère du Ravitaillement).

4. A series of food laws have been further enacted:

a. Increase of the proportion of the wheat grain used in the bolting for the making of flour.

b. Institution of two meatless days per week and reduction of the menu of meals in hotels and restaurants to three courses only.

c. Institution of sugar cards reducing, monthly, the sugar consumption to 750 grammes, and later to 400 grammes per head.

Besides food laws proper, there ought still to be mentioned in connection with them the institution of coal cards regulating the supply of coal for home consumption. This democratic provision is preventing the well-to-do from buying at high prices, thereby increasing the general retail market price for the larger part of the population.

IV. INTERALLIED MEASURES

The carrying out of these national measures has been seconded by a general interallied understanding. An interallied "wheat executive" (December, 1916) and recently a "meats and fats executive" have been appointed by France, Great Britain and Italy, thereby providing an interallied buying and apportionment of imported supplies.

V. AMERICAN COÖPERATION

The aims and results of the food control organized in the United States are well known. The allies are concerned by the

national husbanding of American resources and by the controlling of food exports. After provisions are made for the national consumption the available surplus is kept for supplying the needs of the allies.

This American cooperation has been meeting with a very special appreciation in France as regards the supplies provided in the past and in the present to hundreds of thousands of our unfortunate countrymen who are still enslaved under German bondage and oppression in northern France. Those people have been and are under much worse conditions than the Belgians and their pitiful, exceedingly critical situation at present is a matter of grave anxiety. If they have not literally starved, if they have not died out, this was due entirely to the Belgian Relief Commission operating in northern France.

From this standpoint no adequate tribute could be paid to the former Director of the Commission of Belgian Relief, to the present United States Food Controller, Mr. Herbert Hoover, to his genius for organization, to the generous and tireless activities of Mr. Hoover and of his staff, to their firmness in dealing with German authorities in invaded territories and in upholding American rights for the benefit of our countrymen. Amongst many American names forever dear to us, the name of Mr. Hoover will ever be remembered by the French nation with a deep and affectionate gratitude.

VI. CONCLUSION

The conclusion to be derived from this review of the food situation in France is plain enough. In her sustenance, France has been depending upon imports in an increasing way. Upon an adequate supply of foodstuffs as well as of coal, and of the other main war supply—steel—depends in the present and in the near future the further resistance of our civilian population and the sustenance of our armies, who, after having borne the main brunt of the fight for three years, are still defending about three-quarters of the western front and acting as the main rampart of the allied cause.

Considering the main food supply—wheat—only the needs of France are emphasized by the present condition of crops. Taking 100 as indexing a very good crop, while the crop of 1916

winter wheat was not classed higher than 64, a very poor crop is indicated by this year's probable index 56.²

Needless to say an increase in the supply of foodstuffs means finally an increase of the tonnage available for imports in France. For France thus, from the point of view of American coöperation, the supply of tonnage stands out as the vital issue.

THE FOOD PROBLEM OF GREAT BRITAIN; THE SHIPPING PROBLEM OF THE WORLD

BY ARTHUR POLLEN, ESQ.,

London, England.

I can only direct your attention to one or two salient and really rather startling facts. Before the war we used to import 13,000,000 tons of food, a shade more than one-quarter of our total imports measured by weight. We grew at home about one-fifth of the wheat we required and about one-half the country's consumption of beef, mutton, bacon, etc. Within the past six months great efforts have been made for an organized reduction in the consumption of food and an organized increase in its production. The results are unexpectedly satisfactory. Our consumption of bread is reduced by 25 per cent on the average, and by more in some districts. Further economies undoubtedly can be made. The

²The decrease of the 1917 crops compared to the 1916 ones is noticeable for all cereals. Reports based on unpublished official estimates give the following figures for 1917:

	<i>Metric tons</i>
Wheat	3,950,000
Spelt	90,000
Rye	700,000
Barley	700,000
Oats	3,500,000

Corresponding figures for 1916 were in round figures:

	<i>Metric tons</i>
Wheat	5,841,000
Spelt	111,000
Rye	911,000
Barley	857,000
Oats	4,127,000

meat reduction is greater and we have more than doubled our production of cereals. We used to grow enough for ten weeks. This supply would now last us thirteen or fourteen weeks. We have nearly doubled the old supply which gives us six months' wheat grown in the country. But we are growing other things which should progressively take the place of wheat, and in the last year we have greatly increased our stocks. It looks, therefore, as if the food supply of Great Britain could be assured to the end of 1918 and that no anxiety on this score need be felt.

The food problem of the world is governed not only by the demand for food in one country and by the total supply of available food in others, but by the problem of shipping the food from one country to another. This problem has been made infinitely grave, not only for the period during which the war lasted, but quite obviously for a considerable period after it. It has been made grave by the enemy's having adopted a method in sea war to which there was no precedent in civilized times.

It is fortunate for the world that the pirates' progress of Germany has been a development and did not open in 1914 at the full tide of its present heartless villainy. The captains of the *Emden* and *Karlsruhe*, and of the armed cruisers that took between fifty and sixty British ships in the opening months of the war, never injured a British seaman or hurt a passenger. Müller of the *Emden* was a model of courteous deportment in this respect. The captain of the *Eitel Fritz* was, I think, the first to break with the civilized tradition. The rule of international law, as you all know, is that normally all prizes must be taken into port. The captor has no final right in them until a court of law has found them to be legal prize. In very exceptional cases they may be destroyed at sea. The Germans had to make the exception the rule. When they took a prize, therefore, the problem presented itself how were the crews and passengers to be disposed of. Von Müller put the crews and passengers taken from separate prizes into one ship, which he kept with him until it was full, and would then send that ship to a British port. He may have strained the law in sinking ships without legal procedure, but his treatment of his prisoners was exemplary. The captain of the *Eitel Fritz* took them aboard his own ship and kept them confined below decks, and there they remained prisoners until he surrendered himself to internment at an

American harbor. His captives, therefore, were exposed day after day to the risk of death, for had he met a British cruiser, he must have been engaged and destroyed.

When the submarine war began and the indiscriminate sowing of mines, all considerations of humanity were thrown to one side. But here too there was a development in brutality. Where the submarine was not risked, crews and passengers were originally given a chance to get into the boats. But it was found that too many ships escaped under this proceeding, and it was quite clearly realized that the only way of making war on trade effective, was to sink always at sight. This could not be done without declaring war on all the world. And after some years of it, all the world now seems to be declaring war on Germany. But I am less concerned at this moment to expatiate on German villainy than to direct your attention to an economic result which must flow from it. The submarine campaign has very gravely diminished the world's supply of ships. Now when the war ends it is precisely ships that will be more wanted than anything else. The homes, the railroads, the factories, the bridges and the roads of a great deal of Europe will have to be entirely rebuilt, reëquipped, remade. It is work that must be done at the highest possible speed. If the manufacture and agriculture of Europe are to be restored, raw material, lubricants and fertilizers must be imported in vast amounts. Over the greater part of Europe the soil is exhausted, and without fertilizers the crops must continue very small after the war is over. For some years, then, the European demand for imported food will be just as great as the demand for steel, cement, tools and raw material. None of these things can be taken from the countries where the supply exists, North, Central and South America, Australia, New Zealand, India, China and Japan, without shipping. The demand for shipping, therefore, may be nearly twice what it was before the war, and that demand will have to be met by a very gravely depleted supply. The depletion has been brought about by methods of war not only illegitimate but indescribably barbarous and horrible. The country that has invented and practiced these methods has a considerable shipping unemployed today in its own harbors. The German merchants and importers will be candidates for cargoes of all sorts, and especially for cargoes of food, which they will want to carry in their own bottoms when the war is over.

I therefore put this problem to this learned society. Dismiss if you like from your minds every vindictive thought, abandon every plan for punishing these unnatural and murderous innovations that have taken the place of the old chivalry of the sea, but even if you renounce the principles of direct and active punishment, is it reasonable to suppose that you will forget who have been the authors of these crimes? And if you do not forget, if the world remembers, then surely when the readjustments come after the war and Europe has to be restored, surely then Germany will be told that her needs will be the last that will be met.

Make no mistake about it. Whether the war ends this year or next, or the year after, Europe is faced by a five years' shortage of food, which may well mean five years' famine. It is a situation that it will be very difficult, nay, impossible to meet by the individualistic operations of trade which governed the world commerce before the war. The national necessities of every country have driven the allies into governmental control of the supply and now of the distribution of raw material and food. This will have to be continued when the war is over unless grave injustice is to be done. Whatever the economic principles we profess, we are here faced by a purely human problem which nothing but national action, and indeed international concerted action, can deal with. And I suggest to you that it should be a first principle in this action that those who have brought about the present chaos, who are the authors of the hideous destruction that has taken place, who were the prime cause of the overwhelming wants Europe will feel when the war is over, and the direct creators of the main difficulties in meeting them—these people should be the last to be served. Whatever the issue of the war, this is a matter which it will be in the allies' hands to settle.

SOME ESSENTIALS TO A SAFE DIET

By E. V. McCOLLUM,

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In my association during the summer in Washington with the various women in the field of home economics who were working in association with the food administration, I saw a great many charts and illustrations regarding comparative food values, and I was struck particularly with one type of product which came from various sources. I refer to such charts as illustrate the cost of a hundred calories of energy or the cost of a pound of digestible protein. In such charts we find invariably that for a dollar one can purchase the greatest amount of energy in the form of one of the cereal grains or their milled products, depending upon the market price at the particular time. The cheapest energy foods are those that are derived from the cereal grains.

Now what effect will the distribution of such illustrative matter broadcast over the land have upon the dietary habits of the people of the United States at the present time? I think the answer is clear. Never before has the cost of foodstuffs risen to the present point. It is taxing very seriously the budget of numerous households to meet the food requirements of the family. I feel that there is an element of danger in giving the housewife this information without supplementing it with further advice to enable her to make a wise selection of food so that her list of purchases will provide a safe diet.

I am told that the recent rise in the price of milk in some of the large cities has already reduced the consumption of milk by the people. Under the stress of poverty the list of foods purchased becomes restricted and more and more the tendency is to use principally wheat bread, corn bread, oatmeal, rice, peas and beans, or dishes prepared from these, so that the diet becomes derived almost wholly from the seeds of plants. The charts of food values to which I have referred encourage women who are alert and anxious to study the food problems, to buy just such a list of foods as that just enumerated. Milk and green vegetables do not appear to the average

housewife to be economical purchases because they contain much water and do not compare favorably, pound for pound, with the dry cereal grains.

MILK AND GREEN VEGETABLES IMPERATIVE

It is so important that the diet should contain a certain amount of milk and green vegetables because of the special values which these possess from the dietary standpoint, that I want to place special emphasis upon this point and, furthermore, I want to show you why a diet consisting too largely of cereal grains will not induce optimum nutrition.

There has long prevailed in the discussions of matters relating to nutrition, the idea that the essential constituents of the normal diet are protein, carbohydrates and fats, and certain inorganic salts. Since the organic constituents named all furnish energy when they are oxidized, the idea has prevailed that the proportions between the carbohydrates and fats in the food is a matter of little importance. This idea is correct. The eskimo eats little carbohydrate and much fat, while people in the temperate regions eat relatively very much less fat. It is a common misconception, however, that the people in the warmer regions of the world do not eat liberally of fats. They consume much more fats than do the peoples living in the temperate regions. This is purely a matter of convenience and came about through the relative abundance in the tropics of oil-rich fruits and nuts. The temperate regions produce the cereals and other crops which are with few exceptions rich in carbohydrates and poor in fats. Man has adapted himself to the character of the foods which he has found available, and through long usage certain dietary habits have become fixed.

There has been much importance attached to the protein content of the diet, and justly so. I shall not attempt to discuss the merits of the high or low protein diet. Practically all students of nutrition are now agreed that a fairly liberal supply of protein in the diet tends to promote good nutrition better than an amount which closely approximates the physiological minimum. Furthermore, this aspect of nutrition is so well appreciated that it receives the attention of all who concern themselves with the planning of rations.

One of the dietary factors which should be given attention is

the inorganic or mineral content. The research of the last few years has brought to light an importance of this part of the food which was not hitherto suspected.

Another fact of the greatest importance in enabling us to plan adequate dietaries is the knowledge that there exists two substances the natures of which are still unknown which must be present in the diet if an animal is to grow or long maintain a state of health. The existence of one of these has been appreciated only about four years and the other but two. Although we do not know much about the natures of either of these substances we have definite and fairly adequate knowledge regarding where they can be found.

One of those substances is especially abundant in milk and it is fairly abundant in the leaves of plants, but almost without exception is deficient in the seeds of plants. Butter fat is one of the best sources of it. Egg fats are also an excellent source of it. This substance is in these particular kinds of fats and in the leaves of plants, but not in the seeds in adequate amounts.

The second unknown is everywhere abundant except in the following list of foods: polished rice; fats from either animal or vegetable sources; sugars and starches. None of these contain this second food element.

Under ordinary conditions when we take a diet of seeds, or seeds and vegetables, or seeds and milk, or seeds and meat, we get an abundance of the second substance, but we are in more or less serious danger of running a little short on the dietary essential which is not abundant in the seeds but is associated with the leaves and is present in large amount in milk.

There are several cases in the literature of medicine which indicate that serious consequences have actually arisen in Japan and Denmark, due to a specific shortage of that particular unknown thing which is so abundant in butter fats and in milk and in egg fat and in the leaves of plants, but not in the seeds. Up to recent times the practice in Denmark was to feed children on milk containing a moderate amount of fat, but since the introduction of the milk separator, which is very efficient in taking out practically all the fat of milk, a physician named Bloch at Copenhagen has observed about forty-five cases in the last five years of children in the country who were fed on separator milk and vegetable food, who suffered from eye troubles. The eyes become swollen, inflamed and in-

fect, and blindness results unless something is done to correct the faulty diet. The introduction of whole milk causes an immediate response and recovery, providing the eyes are not too badly injured.

During times of famine among the vegetarian people of Japan, hundreds of cases have been recorded of this pathological condition of the eyes in young children; and curiously enough, a certain Japanese physician named Mori has pointed out that the eye trouble in these vegetarian children is cured by giving them chicken livers. As a matter of fact, other livers would cure them just as well. They could be cured just as well with butter fat or eggs.

Another type of malnutrition due to a lack of an unappreciated, unidentified dietary factor is a disease, found in the Orient, that is due to a lack of the second unknown to which I have referred. This is widely distributed in many kinds of food but is nearly absent from polished rice, and this disease which is called *beri-beri* occurs among those people who eat polished rice as the principal article of diet. The principal feature of this deficiency disease is general paralysis.

One of the most important things to realize is that the chemical analysis of foodstuffs, no matter how completed or by whom made, cannot give the slightest evidence as to the biological values of the foods. Such knowledge can be gained only by properly conducted feeding tests. I have during the last five years perfected a systematic procedure which involves a series of feeding experiments, and which yields results which constitute a *biological analysis* of food-stuffs. Briefly the principle is as follows: a single natural food in a wholesome condition is fed as the sole source of nutriment and then with single or multiple additions of isolated food factors. This will be clear from a simple illustration. If we represent protein by P, inorganic salts by S, the unknown dietary substance associated with certain fats and with the leaves of plants by A, and the remaining unidentified dietary factor by B, the dietary properties of a foodstuff, as the maize kernel, are determined by feeding maize in the following ways:

- | | |
|------------------|---------------------------|
| 1. Maize alone | 8. Maize + P + B |
| 2. Maize + P | 9. Maize + S + A |
| 3. Maize + S | 10. Maize + S + B |
| 4. Maize + A | 11. Maize + A + B |
| 5. Maize + B | 12. Maize + P + S + A |
| 6. Maize + P + S | 13. Maize + P + S + B |
| 7. Maize + P + A | 14. Maize + P + S + A + B |

Only rations 12 and 14 in this series will adequately nourish an animal during growth. This shows that there are three ways in which the maize kernel is deficient, *viz.*, its proteins are not of very satisfactory character; it lacks a sufficient amount of the unknown factor A and it is too poor in certain inorganic salts to support physiological well-being in a growing animal. What I have said about the maize kernel can be said almost without qualification for the other most important cereal grains; wheat and oats, and other common seeds. Since the dietary properties of various seeds are about alike their mixtures are but little better than the single seeds fed as the sole source of nutriment. The seeds are perfectly good foodstuffs so far as they go but we should recognize their deficiencies and see to it that they are combined with such other foods as will make good their shortcomings. Chief among the foods which correct the deficiencies of the seeds are milk and the leaves of plants, such as cabbage, lettuce, spinach, cauliflower and such other leaves as are appetizing as greens. The tubers such as the potato and sweet potato possess a certain amount of corrective character, but are distinctly poorer than the leaf of the plant.

Why do milk and leaf-vegetables make good the dietary deficiencies of the seeds? It is because they are especially rich in those mineral elements, such as calcium, sodium and chlorine, in which the seeds are deficient. They are rich in the unidentified factor A which is abundant in certain fats and in leaves but with few exceptions, not in seeds and their proteins supplement those of the seeds so as to enhance their value.

Whereas an animal can live but a short time when fed oats alone, a mixture of rolled oats, 60 per cent, and a flour made from immature alfalfa leaves, 40 per cent, constitutes a fairly satisfactory monotonous diet from infancy to adult life. Normal development cannot be secured on any mixture of seeds as a restricted diet, but combinations of leaf with seed are in most cases fairly satisfactory.

There are at the present time thousands of people of the working classes in the south who are suffering from a disease known as pellagra. Dr. Goldberger of the Bureau of Public Health in Washington has demonstrated that the disease is the result of a faulty diet.

A year ago, owing to the high cost of foodstuffs, there were several people especially interested in home economics who made inquiry into the question as to what was the least expenditure of

money on which a self-respecting human being might expect to be well nourished. There was such a group of investigators in Chicago about a year ago, and after careful inquiry they decided that in Chicago about forty cents a day was the lowest expenditure on which an adult could be reasonably well nourished.

While that investigation was going on, Mrs. Dewey made an investigation of the insane hospitals and state prisons of New York, and found that they were feeding the prisoners and insane patients in that state on about eleven and six-tenths cents a day.

Dr. Goldberger has produced experimental pellagra in human beings on a diet supplying an abundance of energy and affording considerable variety, but derived too largely from seeds. The governor of one of the southern states agreed to pardon any convict in the state penitentiary who would volunteer to eat such a diet as Dr. Goldberger might prescribe until he chose to discontinue the experiment. There were eleven of them who took the chance.

He kept these men in the country on a sunny slope under ideal hygienic conditions. They were given dishes prepared from the following list of foodstuffs: bolted wheat flour, corn meal, oatmeal, corn starch, sugar, syrup, bacon fat, cabbage, collards, turnip greens and sweet potatoes.

After five and a half months five of the eleven men in this experimental group showed distinct signs of pellagra. In some of the insane hospitals and orphanages of the south where formerly there was a high incidence of pellagra, Dr. Goldberger found the disease to disappear when an adequate diet was supplied. I venture to say that the trouble with the diets of the people in these regions is the very high percentage derived from the seeds of plants or products made by milling or polishing the seeds. There is an element of danger in restricting the diet of either man or animal too largely to products of this class.

Dr. Goldberger has pointed out that the diet of many of the poor people of the south consists in winter of corn bread, salt pork and molasses. This they eat with little variety in the way of other additions, and by the end of winter come down with the disease. From what I have said of the nature of the dietary deficiencies of the seeds the nature of the deficiencies of the pellagra-producing diets is fairly clear. The fault does not lie in any one dietary deficiency but in poor quality with respect to several factors.

The greatest nutritional problems before us now are two in number. First we must find a way to provide the leafy vegetables at moderate prices to the people of our cities. These foods should be the least expensive of all. They are great producers and are easily handled, but because of their tendency to spoilage the present system of marketing renders them a hazardous class of foods for the retail dealer to handle and the prices are accordingly exorbitant. One of the greatest boons which could possibly come to the poor people throughout the world would be the discovery of a plant which is a good agricultural crop, whose leaves are not fleshy, but of a character which permits their being promptly dried in the sun as are our hay crops, and the immature leaves of which could be converted into a flour with good keeping qualities. Such a leaf must be free from tannins and other bitter principles and so nearly tasteless that it could be incorporated with wheat flour to the extent of 20-25 per cent without destroying the pleasant flavor of the wheat loaf. Such a bread would have dietary properties vastly superior to any variety of dishes derived from wheat, corn, oats and rice when prepared without the use of milk and taken without sufficient vegetables to correct their deficiencies.

If such a plant can be found and the public educated to the regular use of such a mixed flour the health of all peoples who live on a restricted diet would be greatly improved. Since high ideals, ambition and aggressiveness are promoted by physiological well being, the gain to society would be very great indeed. I have the hearty coöperation of Mr. Fairchild of the Bureau of Plant Industry in securing plants which may meet these requirements.

The second fundamentally important dietary problem with which we have to deal is the preservation of the dairy industry. The prices of feeding stuffs have gone up 100 to 200 per cent while the price of milk has advanced only about 20 per cent. Such a condition makes milk production unprofitable and will lead, if not remedied, to an abandonment of the dairy industry. Such an event would be a misfortune of the gravest consequences to the public health. We have long been accustomed to the use of milk in liberal amounts in cookery, and of cream, butter and cheese. It is not generally appreciated that these articles have a dietary value far greater than can be expressed by their protein and energy content. They act as correctives for the deficiencies of the cereal

grains and without them the nutrition of our people will suffer serious impairment.

The nation-wide cry against further advance on the cost of milk is unjust and dangerous. The cost of milk must go up and up so far as is necessary to insure that the dairy industry shall remain a paying one.

The only alternative in dietary practice which can maintain the health and efficiency of our population is the adoption of a new type of diet derived in suitable amount from leaf flour. This, however, involves still unsolved problems and cannot at once be put into effect. The only product which can in some measure meet the requirements is the flour prepared from the alfalfa leaf. It is not entirely satisfactory as a human food but baking tests made in the departments of Home Economics at several universities have shown that 10-12 per cent of alfalfa leaf flour can be used with wheat flour without affecting perceptibly the physical properties of the wheat loaf. Bread prepared from mixed flour of this character is slightly green but does not differ greatly from whole wheat bread in taste. More than 12-14 per cent of the leaf produces a slightly stringent taste which renders the product less acceptable to the human palate. A better leaf flour should be found for this purpose and I believe this will be accomplished before long. Such a leaf would not, however, do away with the need of milk and its products. The appetizing nature of these and their capacity in culinary practices of conferring palatability upon other foods make them foods for which there can be found no substitutes.

The mixed seed and leaf flour which I have described will serve only as a cheap and safe food for those whose earnings do not permit the use of foods other than the cheapest, *viz.*, the seed products, molasses, etc. For these meats do not form efficient dietary supplements and their purchase is not logical. We could entirely dispense with meats without suffering any ill effects whatever, but if we permit the use of milk, even in the diet of adults, to fall much below the present consumption, its effects will soon become apparent in our national efficiency.

DIETARY HABITS AND THEIR IMPROVEMENT

SOME RESULTS OF THE WORK OF PHIPPS INSTITUTE

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Anybody who has worked among the laboring classes and has any knowledge of the small wage-earner, realizes very quickly that there is no other class of people who are so shockingly extravagant and so ignorant in the making of their purchases, not only as to food but in other directions, and this holds true and did hold true long before food shortage became such a vital question; it has always been a vital question with them.

In one study that we made at Phipps Institute, some years ago, on the relationship that might possibly exist between tuberculosis and the garment-making trade, we found that in those individuals who were getting insufficient food or who were taking their food at irregular intervals the incidence of tuberculosis was higher than among those adequately fed. Among the men there was a very considerable proportion of those with a food deficiency who developed not only tuberculosis but other ailments; among the women, the proportion was almost three times as great as with those who were getting an adequate diet.¹ I have no hesitation in saying that malnutrition is probably one of the most potent causes of tuberculosis that we have among the working class. It leads to a lowered resistance and is to be ascribed in some instances to poverty, but quite as often it is due to ignorance on their part as to the food they should get.

Another study we made, of an intensive nature, was that of studying very completely, twelve families, these twelve families being represented by three Italian families, three Russian Jewish families, three negro families and three Polish families. This study was conducted for a period of two weeks, and in each of the families a very accurate estimation was made. A nurse went to each one of the homes and weighed all the food they had on hand when the study started, weighed all the food purchased each day and what

¹ Eighth Report, Phipps Institute, 1915.

was left at the end of the study was subtracted from the total. The amount used was then reduced to calories.

This study brought out some very interesting facts as to racial characteristics, not only as to the type of food but more particularly as to racial economy in food purchases.

The Italians made by far the best showing. Reducing each one of these families to men per day, we found that the Italian families were feeding themselves at the rate of nineteen cents per man per day. The negroes came next with twenty-two cents; the Russian Jews, twenty-four cents, and the Poles jumped up to thirty-four cents, and in one Polish family they were spending forty-two cents per man per day.²

As to the composition of the food, the Italians were getting almost 75 per cent of carbohydrates and were getting less than one-half of the amount of protein that is ordinarily believed to be necessary. In talking with Dr. A. E. Taylor about this, he offered the explanation that the Latin races, as a whole, are the only ones who have adequately solved the problem of preparing carbohydrate foods and have been able to cook them in a palatable form so that they are readily eaten and can be subsisted on without any great detriment.

The negro, for some reason, as I found not only in our own experiment but in other investigations, runs to a very high fat content in his diet. He not only eats large quantities of fat, but the other articles of his diet are commonly cooked in fat. The Russian Jews subsisted on a diet which was more nearly balanced than that of any of the others. The Polish families were getting a diet that was pretty fairly balanced, but in going over it and analyzing the diets per family, it was found that they were buying a large amount of food stuff in which there was no essential food value at all. In other words, they were extremely lavish in their expenditures and did not begin to get out of their purchases what they should in the way of absolute food value.

The result of this study was that it seemed apparent to us that the dispensary patient seems to be getting about four-fifths of the amount of food that he should. In other words there is just that subnormal amount all the time that is probably lowering his resist-

² The figures quoted are those of two and a half years ago.

ance and if there is any additional strain put upon him he readily falls the victim of some disease.³

The influence of good food has nowhere been better demonstrated than in our open-air schools. In the beginning children referred to the open-air schools were designated as tuberculous or pretuberculous. More often, however, they are delicate, under-nourished children, who are without any apparent organic disease that you can put your hands on, the chief difficulty seeming to be that of malnutrition. When they are placed in an open-air school and supplied at the same time with at least one mixed meal, these children make the most amazing gains in weight.

A study somewhat similar to that made by us was conducted by Miss Lucy Gillette for the New York Association for Improving Conditions among the Poor. An intensive study was made of children. She found that there were certain variations as to the food requirements for different types of individuals. She points out very clearly that the delicate child, one that is emaciated and under-nourished, is one that inevitably needs a vastly larger food supply than the child under ordinary conditions.

I was much interested only a short time ago, as pointing to the ignorance of food values which I think obtains among the masses pretty generally, in a statement made by the Chief of the Department of Food Hygiene of the Argentine Republic, to the effect that, among the laborers in Argentina, as a whole, a most inadequate knowledge of and the most thriftless habits in regard to food prevailed. In his opinion there was most urgent need for legislation which would see to it that these people got a better balanced diet. Legislation, I believe, would not have the slightest influence. I think the problem is one entirely of education. This brings up the question of how to teach people the kind of and the amount of food that they should get each day. Personally, my experience has been that irrespective of the race, there is a tendency to take a diet that is more or less similar. One race may eat a little more fat and another go a little further in carbohydrates, but there is this tendency to use a mixed diet, and where they have their independent choice, they keep away from any set food formula.

But the essential thing is to teach people the quantity and quality of food desirable and in addition the relative values of

³ Craig and Landis; Transactions Association American Physicians, 1916.

different foods. Our experience at the Phipps Institute has been that housewives vary tremendously in their purchasing abilities; one woman, for instance, for every ten cents, would get food equivalent to fifteen hundred calories, another would get only nine hundred. In other words, there was a difference of almost 40 per cent between the purchasing power of two women.

In some of the work that we have done in connection with tuberculosis classes, we watched more or less closely the amount of food the patients were getting. It was necessary, in almost every instance, to show them the kinds and amounts of food needed. If there were available four or five dollars a week for food in a family of five—I am quoting figures for six years ago—it became necessary in nearly every instance to show them exactly how they should spend those four or five dollars to get the food that would give them the best returns.

The only way we have of controlling the amount of food we are giving to an individual and determining whether that individual is on a subnormal diet or not, is by the caloric method. I want it understood, of course, that the calory does not mean everything. We have to take into consideration the preparation of the food and very often, the service of the food and, in addition, to keep in mind, the use of those foodstuffs which furnish the so-called vitamins. But the caloric method is necessary as a means of determining whether the individual is on a subnormal diet, or whether, perhaps, he is being overfed, as many are. In one school which was investigated, it was found that the boys were each receiving about 5,500 calories daily and in addition were getting about 500 more outside in the form of candy. In other words, they were tremendously overfed.

The difficulty with the caloric method has been that lay people as a whole have very little conception of what is meant by a calory; and it is undoubtedly true that many physicians have a very hazy idea of what is meant if you say that an individual should have 2,200 or 3,000 calories a day. The great trouble with the caloric method has been the difficulty of translating the values in intelligible form to the individual who knows nothing about them. One of the difficulties has been that it is a tremendous tax on the memory to recall that so many grams of a certain amount of food equal 135 calories, and so many grams of another kind of food equal 40 calories.

What I believe to have been a marked advance in the introduction of the caloric method was a suggestion first made by Dr. Irving Fisher, by which you use a common unit of 100. The next advance in this line was made by Dr. William Emerson, of Boston, who translated these 100 calories into perfectly familiar terms so that even the most ignorant housewife could understand. He has reduced them, for instance, to teaspoonfuls, cupfuls and so on—a teaspoonful of a given amount of food equals a hundred calories, so in that way the values could be very easily followed. He has had an exhibit prepared on these lines which he has used with extraordinarily good effect in the teaching of dietetics to delicate children. In this way he has been able to teach children, of even seven or eight years of age, how many calories they have taken a day and how many more they need to make up their quota. It is not so difficult to teach even the individual with a very slight amount of education what you mean when you say that he must have 2,200 or 2,400 calories of food per day when this is translated into familiar measurements. I have had one of these food exhibits made because it visualizes these values and enables one to learn more in a few minutes than any amount of talking would do concerning caloric feeding.

For instance, it does not take very long to remember that approximately a quart of bouillon made of the very best meat you can get is 100 calories, and you can contrast that with two tablespoonfuls of lima beans, which have a food value of 100 calories. The banana, equaling 100 calories, is one of the easiest articles of diet to get, is always on the market, and has recently been shown to be practically the equivalent of the potato. It can be eaten as almost the sole and only diet. The chief difficulty with the banana is that so often it is sold green, or partially so. One roll equals 100 calories; one pat of butter equals 100 calories; four of the ordinary Uneda biscuits equal 100 calories; the lean portion of one lamb chop equals 100 calories; twelve double peanuts equal 100 calories; a piece of fish about the size of the palm of the hand equals 100 calories; a teaspoonful of peanut butter equals 100 calories; and so you can go through the whole list, reducing the commoner food-stuffs to a basis that anybody can understand. Extreme accuracy is not claimed for this plan but it does serve to give a fairly clear idea of what the individual should receive.

I used this method a part of last year with medical students and their own testimony was that they were able to get a clearer idea in fifteen minutes as to what was meant by caloric feeding by being able to visualize the articles, than they were by reading pages and pages of tabulations showing that so many grams of one thing equaled so many calories, and so many grams of something else equaled so many more calories. I intend to use the method this winter with dispensary patients to find out, in the first place, approximately how much food they are getting. It has been our experience that many of the patients who come to Phipps Institute are getting food which amounts to but 1,200, 1,500 or 1,800 calories when their disease demands that they should be getting about twice that amount; and quite as often as not you will find that their deficient dietary is not a result of the fact that they have not money enough to get the food, but because they are not purchasing the right kinds of food.

Whether a better method than this one can be devised for the teaching of dietetics among people who have no knowledge whatever of food values, I do not know. I do know this, that prior to my seeing this exhibit, I had a very poor idea as to what my daily food consumption was. I had not the slightest idea whether I was getting 1,500 or 3,000 calories, but with this method I can compute it with a fair degree of accuracy.

A GUIDE TO THE NATION'S DIETARY NEEDS

BY HELEN W. ATWATER,

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There are many popular theories current regarding the food habits and customs of different nations and regions and even more theories as to how those habits and customs might be changed to the benefit of mankind, but to a large extent these are based on inadequate observation, often merely on personal impressions, or even on the somewhat prejudiced opinions of the food faddist or the commercial exploiter. Evidently if we are to say with anything like accuracy how the nation can best be fed, we must have more definite

information as to what it needs and what it habitually uses. We are far from knowing as much as we should on either of these points, but the work of physiologists, chemists and statisticians taken together has done much toward starting us toward a real understanding of dietary needs.

During the last fifty years, our knowledge of human nutrition has developed into a well-ordered science, and as the combined result of clinical study, laboratory investigation and accurate observation of the diets normally chosen by persons living under different conditions, students of nutrition are now fairly well agreed as to the general food requirements of normal men, women and children. Our knowledge is rapidly increasing regarding the part played in the body by the different mineral matters, different types of protein, and the little known but apparently important growth-determining and body-regulating substances and as a consequence our ideas as to the special values of different kinds of food are slowly changing.

But while doctors still disagree as to the exact number of grams of protein a man should consume a day to build and repair his body tissues or exactly how we should reckon the calories of energy needed by the various members of a family, the great majority are now willing to adopt as a working hypothesis a daily requirement of from ninety to one hundred grams of protein for a one hundred and fifty-pound man at full vigor, with 3,000 calories of energy if he does a moderate amount of muscular work. Certain factors are also generally accepted by means of which this standard can be changed to express the requirements of persons of different age, sex and muscular activities. The energy requirements of a man at severe muscular work, for example, are reckoned as two-tenths greater than that of one at moderate muscular work, and that of a woman as eight-tenths of that of a man of corresponding muscular activity. In the light of our present limited knowledge of the rôles played by different food constituents, it is generally considered safest to obtain the required protein and energy from a mixed diet in which the protein foods (*i.e.* meats, fish, dairy products, eggs, dried legumes, etc.), cereals, fruits and vegetables all appear with enough fats and sugars to render the diet palatable.

Exactly how much of each type of food should be included daily or even weekly, few would care to say. In practical menu making,

this is usually decided by the amount of money one has to spend on food; but the food groups should all appear reasonably often, and milk should always be provided for the use of children. Such a diet seems to correspond with the food habits most common in this country. Among the very poor, especially in large cities and in seasons of high prices, the total amount of food used is probably dangerously inadequate; and among special groups of our population, for instance in certain mountain regions of the southeastern states, there is evidence that the variety of food materials used is too restricted for safety; but taking the country over, we probably err on the side of abundance rather than scarcity. At any rate this is the condition shown by accurate studies of family dietaries that have hitherto been made in different sections of the country.

If we accept the standard quoted as a safe measure of food requirements, it should be a simple matter to calculate the food requirements of the nation. The census reports give the number of men, women and children of different ages and a fairly good indication of their occupations and probable muscular activity. Applying the factors previously referred to with these figures we could work out the total annual protein and energy requirements of the nation and the average requirements per capita per day. Going a step further, it would seem an equally simple matter to compare this theoretical national requirement with the total food consumed, and to tell at once how we could safely change our food consumption in a time of food shortage or national emergency. This is exactly what was attempted in Germany by the so-called Eltzbacher Commission and in England both by Thompson and by the Committee of the Royal Society in their reports on the Food Supply of the United Kingdom. It may be interesting to note in passing that both British reports used the American dietary factors and tables of composition of food materials originally worked out by Atwater and his associates and slightly revised by his successor, Langworthy, in the United States Department of Agriculture publications—a pleasant instance of the help American science has given to our allies.

Unfortunately, such calculations are open to two objections, which the practical experience of the foreign food control authorities has found to be well-founded. First, there are no figures from which the total food consumption can be calculated with any certainty of

correctness; and second, assuming the totals to be correct, they give no adequate idea of regional, racial or occupational variations in food habits.

In the foreign reports, the food consumption figures were obtained from agricultural and trade records of production, export and import, and if it were desirable, the same thing could be done in this country, in fact has often been done for such staples as wheat, beef, pork, etc. Unfortunately, when we try to do this for all the materials used for human foods, we find our records incomplete and conflicting. Nobody knows, for example, how much of the total corn crop is used for cattle feeding, how much in industry, and how much for human food. The census may show how many farmers keep hens, but would anyone care to estimate how many eggs are used in the average farm home or how many chickens end their careers on the farm table? Even supposing that we could estimate the total amount of vegetables and fruits raised in this country, could anyone say how much was wasted or spoiled before it reached the table? Even such an important and well-organized business as the dairy industry can give us no definite information as to the milk consumption of the United States. The census enumerators may take careful note of every cow in the country, but the most experienced dairyman can do no more than guess how much milk is used on the farms where it is produced, and not even he can say how much is fed to the stock, how much goes into butter for home use, and how much is consumed as such by the family. The most reliable estimate gives seven-tenths of a pint per day as the probable per capita consumption of milk, exclusive of butter and cheese, but this is admittedly based on nothing better than intelligent guesswork.

So far it has not seemed worth while to estimate the total food consumption of the United States by such a method. For the present, at least, the plan is to try another method, namely, that of the food survey authorized by a recent act of Congress and begun by the Department of Agriculture on August 31. As the newspapers have said, on that date investigators enumerated all the stocks of food materials then existing in wholesale warehouses and storage plants, in the stores of commission and retail merchants and small producers, and in the hands of hotels and restaurants, etc. In addition to this survey of commercial stocks, 3,500 typical families

selected from all over the country were visited and record made of all the food materials found in their pantries, storerooms and bins. From these an estimate is to be made of the total household stocks of the country—an unsatisfactory method, but the best compromise which could be found between leaving them out entirely and attempting to get figures from all of the 20,000,000 families in the country. The material represented by household stocks makes such a small proportion of the total material recorded, that any error that may creep in here is not serious. The results of this first survey of August 31 cannot fail to give valuable information as to what food materials the country possessed and where they were located; but those responsible for it consider it chiefly useful as testing out the machinery for the second survey which is planned to be made in November or December by improved methods. From the results of the two together they are confident that the annual food supply of the nation can be calculated more accurately than by the method used abroad.

If the food survey stopped there, we should still be faced by a lack of knowledge regarding variations in food customs. This is of great importance because men are more conservative in their food habits than in almost any other, and they will not submit to sudden changes except under the pressure of stern necessity. Everybody knows the stories of famines in Asia where rice-eating peoples have died rather than eat the unfamiliar wheat and barley which the government imported for them. The so-called food riots in some of our own cities last winter took place not because there was a general food shortage, but where certain staples (potatoes, onions, and chicken-fat in many cases) to which the people were accustomed had suddenly gone up in price. It is a first principle of enforced rationing that food prejudices are to be considered as far as possible. When a rich, food-producing nation is being asked voluntarily to share its abundance with distant allies, it is even more necessary for the leaders to know to what food it has been accustomed, and to consider these customs in suggesting changes. In a country which has a great variety of climate, agriculture, industry and racial stocks, there is an equal variety of dietary habits, and some way must be found of learning where and what they are.

The unprecedented value of the food survey as a guide to the nation's dietary needs lies in the fact that in addition to measuring

the nation's stock of food, it has planned to provide reliable information as to what people actually eat in different parts of the country and in families of different circumstances.

This is to be accomplished in two ways. The first is called a food consumption survey, and the preliminary survey was made with the coöperation of the 3,500 housekeepers visited for the household stock records. Each was asked to keep a daily record of the food used by her family for seven days. Blanks were provided on which all the common food materials were listed in a way which she could understand, and she was simply asked to put down the amount of each in the space provided. If purchased, the cost was also recorded; if home produced, this fact was noted and current retail prices were supplied by the investigator who distributed and collected the blanks. Entries were also made of the age, sex and occupation of the members of the household, their guests and the number of meals eaten by each. As much information as possible was collected regarding the health, racial stock, income and general economic condition of the family; the latter might be designated by number rather than name, and thus be identified only by the investigator.

The preliminary survey was necessarily so hastily organized that it was impossible to include as many of these consumption records as were desired or to distribute them as carefully as was wished in relation to rural and urban population, industrial and agricultural conditions, nationality and so on. Fifteen states were represented, chosen with reference to their general known dietary conditions. City and rural studies were included, the families representing various nationalities and incomes ranging from \$450 to \$7,500. In the second survey it is hoped to have at least 10,000 records with all the states represented and to apportion the families with due reference to urban and rural population, racial stocks, occupations and so on. Even so, the results will not be relied on to indicate accurately how much protein and energy is used per man per day, but rather to give a rough sketch of what the people in the different sections commonly eat. If the study does no more than indicate about how much milk the families use, especially how much goes to the children under seven, it will have been worth making. Even the preliminary survey, inaccurate and incomplete as it is, will tell us more than we have ever known about our national food habits.

For more accurate information as to the kind and amounts of food consumed, another type of records has been provided. These are known as dietary studies; the method of making them has been in use for forty or fifty years, and any intelligent senior in a college course in home economics should be able to conduct one. All the food on hand at the beginning of the study, all that procured during its course, and all remaining at the end, is carefully weighed and recorded. All waste and refuse are also noted. From these the amount of each food material actually used is determined. The percentage composition of each is then obtained from standard tables, or in rare cases, specially found by analysis, and by the use of these figures the protein, fats, carbohydrates and energy provided are easily calculated. In these dietary studies accurate note is made of the age, sex, weight, general condition and occupation of the different members of the family by means of which the nutrients and energy actually consumed per person or per man per day are calculated. As full information as possible is also obtained regarding the income, health and general standards of living. The duration of such a dietary study varies from two or three days to several weeks; those included in the food survey are for one week. If studies can be made in the same family at different times of the year the difference which seasons make in the diet is also shown: a condition met, in part at least, by the preliminary and final surveys which will represent late summer and early winter diets, that is, the season in which fresh fruits and vegetables are most abundant and that in which those materials are available mainly in conserved forms.

In the preliminary survey it was not feasible to have the dietary studies made through the same agencies as the food consumption studies, but the voluntary coöperation of suitable institutions and individuals was asked. Blanks and carefully worded instructions were sent out by means of which the task of collecting the desired data was made as simple as possible. All the state agricultural colleges and nearly all the privately endowed colleges having departments in home economics were appealed to and also a selected list of normal schools and other institutions, numbering about 390 in all. These are scattered throughout the forty-eight states, the largest numbers of studies being requested where population is densest.

These institutions were requested to distribute the blanks among their students or graduates in home economics, who in turn were asked to fill them in with data from well selected families. As far as possible these families were chosen with reference to typical variations in region, industrial condition, racial stocks, etc. In addition to the 1,800 studies thus obtained, about 700 blanks were filled out by selected individuals (mainly members of the American Home Economics Association) either in their own homes or in those of families whose coöperation they secured.

In gaining the consent of a family to have such a study made, the national importance of such information was explained and their help was represented as a real patriotic service. The investigator conducting the study usually found it advisable to pay a daily visit in addition to those at the beginning and end of the study, and was expected to fill in the blanks herself. All the calculations are to be made at the Department of Agriculture at Washington by the trained computers for the food survey. It is of course still too early to say how successful this method of collecting dietary studies will prove but the indications are that there will be reliable studies from nearly all the states. In the final survey it is hoped to repeat the studies in enough of the families represented in the preliminary one to give a just idea of seasonal variations in diet, and to include others which will fill in the gap left in the first. If, in addition to these studies, the Food Administration carries out its proposed plan of making similar studies in hotels, restaurants and clubs where large numbers of persons are fed and if we can compile with these the results of such work as the dietary studies made last spring by the United States Departments of Labor and Agriculture in connection with a cost of living survey in the District of Columbia and those conducted a few weeks since in connection with the food conservation work of the Massachusetts Council of National Defense, etc., we shall have a more complete picture of national food habits than has ever been attempted before.

It is true that the food supply this year is abnormal and that the picture thus presented may not show exactly what the nation habitually eats. This, however, will not destroy its present value as a dietary guide. If we learn that among certain groups there is evident under-nourishment we can more intelligently direct our efforts toward improving their supply because we will know wherein

the diet is deficient. If we find that the majority of children under three do not get the quart of milk per day which is believed necessary for their proper development, something must be done to increase the amount available for them, either by increasing the total amount of milk produced, or by lessening the amount used for making butter and cream or both.

If, in spite of high prices and general dislocation of the usual sources of supply, large sections of our population appear still to be eating more than the standard requirement, we shall be more than ever justified in urging them to curtail for the benefit of our allies. Moreover, we may find that in many, and perhaps in most sections of the country, our food habits have not yet been disturbed to any important extent.

Unfortunately we have no recent dietary studies on which to base such a comparison. Most of the statements now made regarding the diet of the United States as a whole are based on a compilation of 400 or more studies made under the auspices of the United States Department of Agriculture between 1890 and 1905. Incomplete as such a compilation seems in contrast to that undertaken by the food survey, it is a more accurate guide than is available in any country except Germany and possibly Belgium, and is fully as reliable as the data on which many accepted statements of the general cost of living are based. According to that compilation 38.5 per cent of the total food in the average American family is of animal origin, of which 16 per cent comes from meat (including lard) and poultry, 1.8 per cent from fish, 2.1 per cent from eggs, and 18.4 per cent from dairy products. Of the 61.5 per cent supplied by vegetable foods, 30.6 per cent comes from cereals, 24.7 per cent from fruits and vegetables and 5.4 per cent from sugar and miscellaneous materials. Judging by recent estimates of food consumption in 950 farm homes in fourteen states recently made by the Bureau of Farm Management¹ and by production and trade figures, the use of meat was decreasing during the years preceding 1915, and the use of fruits and vegetables was increasing, though to exactly what extent it is impossible to say. It seems likely that both these tendencies will be found to be intensified under present conditions. The increased

¹ U. S. Dept. Agricultural Bulletin 410. *Value to Farm Families of Food, Fuel, and Use of House*, by W. C. Funk. U. S. Dept. Agricultural Bulletin, 635. *What the Farm Contributes to the Farmer's Living*, by W. C. Funk.

use of fruits and vegetables is undoubtedly beneficial; and the decreased use of meats is not dangerous as long as small amounts are used occasionally and the total protein requirement is met by other protein-rich foods, including milk and its products.

It may be interesting to see how these older American dietary studies compare with the results of the German and British calculations alluded to before. Such a comparison cannot be accurate because the food materials are not uniformly grouped in the different compilations, and because the foreign studies represent gross consumption and make no allowance for waste, either in marketing or in the household, whereas the American ones refer to food actually consumed. The German figures² for per man per day consumption were 117.3 grams of protein and 4,164 calories of energy. Thompson's figures³ for Great Britain are 105 grams of protein and 4,190 calories of energy. Corresponding ones in the official English report⁴ are 113 grams of protein and 4,009 calories of energy per man per day. Thompson estimated the average waste between producer and consumer at 7.5 per cent. Assuming this to be correct for all three studies, the figures become, for the German report, 109 grams of protein and 3,852 calories of energy; for the Thompson report, 97 grams of protein and 3,875 calories of energy; and for the Board of Trade report, 105 grams of protein and 3,708 calories of energy. A rough average of the 400 American dietary studies indicates about 95 grams of protein and 3,500 calories of energy actually consumed per man per day.

In order to make these figures comparable with the foreign ones, allowance must be made for household waste. This has been found to run from nothing up to as high as 20 per cent, according to the carefulness of the housekeeper. The average is probably between 7.5 and 10 per cent. Assuming the latter figure to be correct, the per man per day consumption of food as purchased becomes 105

² *Die deutsche Volksernährung und der englische Aushungerungsplan*, Edited by Paul Eltzbacher, Brunswick, 1914, pp. vii, 196.

³ A calculation of the foodstuffs and energy of Great Britain's food supply, W. H. Thompson—*Communication to the Royal Dublin Society*, Oct. 26, 1915. Abridged under the title of *The Daily Food Ration of Great Britain*, *Nature* [London] 96 (1916), No. 2416, pp. 687-690.

⁴ *The Food Supply of the United Kingdom*. A report drawn up by a committee of the Royal Society at the request of the President of the Board of Trade, London.

grams of protein and 3,850 calories of energy per man per day. These figures probably underestimate the true average consumption because a larger proportion of the studies on which they are based were made among families lower in the economic scale than would be found in the total population. In fact unpublished estimates of rural diets based on the farm management studies already referred to, show 110 grams of protein and 3,964 calories of energy per man per day. This indicates that the average normal American diet is higher than the English in both protein and energy, equal to the German in protein and superior to it in energy. Its principal advantage over the European ones, however, lies in the fact that it includes a greater variety of food materials, notably of fruits and vegetables. This variety is probably one reason for its greater cost.

The many assumptions made in this rough comparison of our own and foreign food consumption furnish a good illustration of the guesswork used in all such estimates and emphasize again the need of such information as that provided by the dietary studies of the war emergency food survey. If we succeed in carrying these through successfully we may have developed machinery simple enough to be used whenever occasion requires. Indeed, some well-informed food economists hope that in the future such dietary surveys will become a recognized part of our statistical information and be made as regularly as cost of living studies are now. Be that as it may, the extensive series now begun ought to provide a reliable working guide for the present emergency, and an almost inexhaustible mine of general information for the student of nutrition in the United States.

SOME FACTS TO BE CONSIDERED IN CONNECTION WITH THE FOOD PROBLEM

BY HOWARD HEINZ,

Chairman of Committee on Food Supply, Committee of Public Safety of Pennsylvania.

Dr. Nansen spoke about the misfortune of Norway in losing almost all her fine inhabitants, and I want to say that it has been my experience that it has been this country's good fortune to have gained them.

I believe if every man and woman in this country knew Mr. Hoover as he is, the unselfish way in which he is going about his job, the fact that he has nothing to gain, no glory in it, but runs the chance of criticism from farmer, from distributor and finally, from the consumer—they would still better realize the size and importance of the service that he is giving to his country.

I speak not as an expert, not as a scientist, but just as a plain, common consumer who is very much interested in the problem that concerns the people of our commonwealth, the nation and the world at large: our food supply.

With between thirty and thirty-five million men in uniform, consuming a daily average of at least 35 to 40 per cent more than is their custom, with every man and woman in this country, who is willing to work, in a job, which means also increased consumption of food, we have the greatest demand for food that the world has ever known.

What have we in supply? In the meat supply, we have a world shortage of 115,000,000 meat animals today, and it is growing every day because of the inability of foreign countries to provide sufficient fodder. In England today, they have decided to begin killing off more extensively their animals in order to preserve their maize for human consumption. In this country, we have today seven million less meat animals than we had seventeen years ago, and our population is 26,000,000 more than it was at that time; thus, you can see how far away we are from meeting even the home demand and the

reason for the present price of meat. I think it is estimated that 43 per cent of man's living cost goes for food, and nearly 50 per cent of that, on an average, goes into meat and meat products; hence, the importance of the meat situation.

The world wheat shortage amounts to millions of bushels. Our allies have called upon us for between 250,000,000 and 300,000,000 bushels of wheat if we can get boats over safely with it; and if we can't, God pity our allies.

Now, how are we going to meet this question of world shortage in food supplies? I want to direct your attention to what seems to me to be one of the most important points and one of the first to be discussed, namely, the question of production. People who live in cities and who have to pay high prices don't consider that sufficiently. We have to enter into a serious consideration of the world's production markets to enable us to gain a proper attitude toward the producer. The farmer is too little understood.

Have you ever seen any millionaires made on farms? I haven't. Forty per cent of the farms in this state of Pennsylvania are occupied by tenants today. Does that indicate that there is very much money in farming in Pennsylvania? Do you know that the farmer is paying from 75 to 150 per cent more for his machinery? Do you know that his labor has increased over 100 per cent? His seed has increased in some instances from 200 to 300 per cent. His fertilizer, when he can get it, is at almost prohibitive prices. The farmer has problems that we must help him to meet. It might, for example, be very much better for us to pay an increased price for milk as a means of diminishing the number of dairy cattle that are being sold for slaughter because of the high cost of feed. For if they go on killing off dairy cows at the rate they have in the last three or four months, milk is more likely to be twenty cents a quart within the next twelve months than to be less. In other words, as a first step in solving the food problem, we must encourage the producer and give him at least a reasonable profit if we want him to continue in business.

The proper encouragement of production, if we will just carry it far enough, will take us a great way toward the solution of the entire difficulty, for we can talk about marketing and we can talk about conservation, but if we don't produce, we won't have anything to distribute or to conserve.

The perplexing subject of markets and distribution is receiving

much attention in Washington and by the various states. The middleman who is concerned with this phase of the situation is blamed, perhaps unjustly, for many of our woes. I don't believe there is going to be established immediately a new method of marketing. There will be some attempts at it that will help the situation, but a complete change of our whole marketing and distributing problem will not be made in a day. It has taken a great many years to get us into our present condition, and it will take us some years to get out of it. But there are many things that can be done. I think the Federal Food Administration Law as interpreted and put into execution by Mr. Hoover and those associated with him will tend to eliminate some of the extra commission men and brokers that are not only needless, but actually detrimental to both producing and consuming interests.

I think, too, that Mr. Hoover's control of profits, the prevention of hoarding, the cutting out of speculation, will go a long way toward solving the problem of distribution cost. Woe be to the food pirate who falls into the clutches of the law. It will not be very healthful for him, and it shouldn't be, for with the condition of the food supply of the world today, for a man to bargain, to hoard, to speculate in that which concerns human existence, is an outrage against humanity and should be stamped out.

We are trying in Pennsylvania some changes from the regulation channels of distribution by the establishment of curb markets. They have been successful in a number of places and we have in view the establishment of many more of them. They bring the producer and the consumer immediately together; the producer getting more for his produce than he would through the commission man and the retail grocer, and the consumer getting his goods more cheaply.

Another feature of the distribution problem that demands reform is the matter of merchandising service. For many years merchants have been educating consumers to expect service with every purchase, and of course the consumer is charged for the service whether he gets it or not. Now, if the consumer will go to the store and shop for what is there, pay cash and carry it away, we can cut down the cost of distribution considerably. One grocer told me that he could afford, without any question, to reduce his prices, particularly of perishables, from 10 to 12 per cent if people would come to his store, pay cash and take the things home. In regard

to the question of deliveries, some grocers actually average four deliveries per day per house. Somebody has to pay for this, and as such service is always unequal, the poor, who naturally receive the least, suffer most. Such practices must stop if we are to have any kind of a fair method of distribution.

I heard the other day that it was possible in a certain bakery to bake bread for four and one-half cents for a fourteen-ounce loaf, but that when that loaf was delivered to the family it actually cost seven and one-half cents. Now think of it: from the bakery to the grocery store, through the grocery store and delivered to the house, it went up from four and one-half cents to seven and one-half cents, almost 75 per cent. That bakery could have sold its product at the bakery door, with service eliminated, for five cents.

The third thing that we have to deal with in this problem of food supply is the great one of conservation. The women of Pennsylvania have—for we have had investigations made which show it—practiced avoidance of waste to the extent that some of the garbage plants or people in the fertilizing business who get their material from garbage plants, have been complaining over the lack of garbage that is being collected recently. In food conservation I think the women have caught on to what is necessary. Many of them practiced thrift long before this war came on, but simply because they did so doesn't mean that there isn't a lot more to do, because there are little ends to put in here and there that still would make a big volume as applied to the whole of the country.

But there is one factor that doesn't know what food conservation means, and I am sorry to say it is my own sex. Taking him as a whole, man does not seem to realize what is necessary for him to do in food conservation. They say that that is a woman's problem. I have seen very few men eating in restaurants who have changed their usual habits.

Then I think about 10 per cent of the population in this country probably overeat 50 per cent and that another 25 per cent overeat 25 per cent. There are too many people, you will agree with me, who do overeat and perhaps deprive somebody else of needed food and at the same time helping the continual advance in prices. And I want to say to you that I fear prices will be higher before they are lower. The crops are nearly garnered. We know pretty nearly what we have got, and we know how far it falls short of our demand.

Those people who are dealing directly with the food problem are not the only ones who should study it and observe the principles involved in it. Every man, woman and child should enter into the war to the extent of realizing each his own personal, individual responsibility and should play his part if our country hopes to win the war for democracy. It will take every bit that everybody has, with perfect team play, to win the battle. God grant that we may win it soon.

THE HOUSEKEEPER AND THE FOOD PROBLEM

BY CHARLOTTE PERKINS GILMAN,

Author and Lecturer, New York City.

The food problem is:

A. How to produce the most food with the least cost in time, labor and money;

B. How to distribute it to the consumer most swiftly, efficiently and economically;

C. How to prepare and serve it, with the least cost in time, labor and money, and with the best effect on our health and happiness.

The housekeeper is the person who stands before the third clause in the problem; who is immediately responsible for those last elements of cost and of human well-being. She is not ultimately responsible, as she acts under direction. The income of the head of the family limits the style in which they live, and his tastes count strongly in the manner of food served. But as he deposes this work to the housekeeper and abides by the result, she becomes the direct agent in the choice and treatment of the world's food.

Food is produced by farmers, graziers and the like for individual profit, and with so little general knowledge of the needs of the world, of national or international relations, of labor conditions, or even of the essential science of the business itself, that the production is by no means at the least cost.

The farmer, so far as he understands it, must consider "the market" in deciding what, when and how much to raise, and that "market" touches the next step—distribution.

We here enter the field of speculation. Food is gathered together in such immense quantities for storage and shipment that it offers a most tempting opportunity for "profiteering." In storage rates, transportation rates and "market prices" the cost of food is manipulated and its nature and quality dictated, so that most serious effects are felt in the last stage, that of preparation.

Here stands the housekeeper. Behind her are the needs and preferences of her family, the limits of her time, her strength, her knowledge and her purse. Before her is the retail market, where prices and qualities go up or down, moved by invisible hands. It seldom occurs to her to question or protest as to these prices or the frequently lamentable quality of what is offered. "The market" is more vague to her than it is to the farmer.

We have begun to reach, in recent years, the producer's end of this chain. Large public assistance has been given and wide research made, by governments and by men of genius like Luther Burbank. Experiment stations have been established, instruction offered and all manner of stimulation to improve and guide production.

Under imminent pressure of war conditions we are now beginning to take hold of the distributing part of this great business of feeding the world. The anti-social crime of injuring the people's food, or of charging extortionate prices for the necessities of life, is just beginning to be recognized and will soon meet punishment.

But quite beyond this comes the third stage, the one nearest home, the final process, in the hands of the housekeeper. This work must now be studied as to its efficiency and economy.

Recent studies in distribution of manufactured articles show that of the consumer's dollar about one-third pays for the goods, say one-sixth goes to the manufacturer, one-sixth to the wholesaler, and the other third to the retailer. In food products the retailer often gets much more than a third, sometimes more than one-half.

No other retail business demands such limitless rehandling. Our drygoods stores are crowded with shoppers, but we do not have to buy clothing every day and sometimes oftener. The retail food dealer must pursue the consumer, who is always limited in time and strength; must place his wares as near as possible to the home, must even overflow into wagons and pushcarts, shouting hoarsely through residence streets.

In the classified directory of New York City there are listed three and a half columns of retail drygoods stores; while of retail food stores there are: butchers, sixteen and a half columns; grocers, twelve and a half; bakers, five; confectioners, five; milk dealers, four and a half; delicatessen, four; fruit and nuts, four; butter, cheese and eggs, three and a half; fish, two and a third; ice, one; in all about fifty-eight columns. Of the small shops without telephones, the booths, wagons and pushcarts—the proportion would probably be still greater. Even without speculation or dishonesty it is easy to see how large a part of the cost of our food supplies is due to this profuse multiplication of retail handling and delivery.

Before this expense the housekeeper stands helpless. She has neither knowledge nor power in these weighty matters of production and distribution. Her part in the food problem is to buy as wisely as she can, as cheaply as she must, and to prepare her purchases so as to meet the tastes and needs of the family. I put tastes first because of the peculiarly helpless position of this functionary in relation to those whom she serves.

In other trades the dealer may tell you that he does not "carry" this, or "they are not wearing that"; you may take it or leave it; he has his chance of other patronage. But in this trade here is Jones, who pays the freight, and Mrs. Jones, whose business it is to cook the steak as he likes it, to make apple pie or angel cake as he prefers; and here also are the little Joneses, conservative of taste as children are, merciless in criticism, and—always there. No other worker has to *live with his market* as must the housekeeper with hers.

In our country it has been estimated that only one woman in sixteen keeps even one servant. In the great majority of cases the wife and mother is also the domestic servant, with a total of activities such as to prevent high efficiency in any. To her of late years has come an unwonted pressure of responsibility as to health, as to dietetics. To the limitations of her knowledge and skill, the limitations of her income (the working housewife always has a limited income) and the demands of the family taste, has been added this burden as to proteins and calories. The importance of scientific cooking to the public health is undeniable, but it is made a jest of by newspaper wits, and is by no means taken seriously by Mr. Jones, who prefers the pie "like mother used to make."

And now comes the great war. It comes even to us, at last, and with it the splendid burden of feeding the world. In facing this duty the food administration first demands larger and more careful production, then applies pressure to the criminally mis-handled processes of distribution, and then turns to the housekeeper and bids her save!

We are asking economy of the most wasteful of our industrial processes, the inherently and hopelessly wasteful method of preparing food by means of one cook and one kitchen to each family. To get the best results from our effort to improve this primitive industry we must supply to all our millions of housewives, printed in many languages, the plainest and simplest of directions. These should give not only information as to food values and methods of economizing, but model menus, "balanced rations," with a graded scale of cost, showing what is the least amount and variety that will keep us in health and working efficiency, and offering wider choices also.

This being done it remains to see that prices and wages are such as to allow at least this minimum to all our people, else we remain ill-nourished and underfed, as so many are now, in spite of all the proposed instruction. And further it remains, in some as yet undiscussed manner, to induce the family to eat what we have so laboriously urged the housekeeper to prepare.

Among women already intelligent, already competent, already willing, much may be done. People who have purchased too lavishly, who have wasted riotously, may be induced to retrench, and simple restrictions, such as going without wheat bread or meat on certain days, will be widely accepted. But in the face of what may prove the most important phase of this world-changing war, our well-meant campaign of trying to improve conditions in twenty million kitchens, trying to change the habits of twenty million cooks, seems both futile and pathetic.

What should be the attitude of the housekeeper, and of the nation, toward the food problem?

It should be recognized that the preparation of food is no longer a domestic industry. It is no more an integral part of home life than is the making of cloth, once so exclusively feminine and domestic that the unmarried woman is still spoken of as a "spinster." So perhaps might the term "cookster" be applied to women long after they have escaped that universal service.

The scientific knowledge, the trained skill, the wide experience, the discriminatory buying power which should be devoted to the proper feeding of the world can never be developed by the overworked, ignorant, unpaid mother-servant.

In the interests of economy we should clearly see that a system of service which wastes 90 per cent of the "plant," of the running expenses and of the labor involved—which allows maximum prices with all manner of extortion, and inferiority of materials, and which patently fails to maintain the health of the community, ought not to be persisted in merely from inherited sentiment and habit.

The drained and wasted nations are beginning to count their "woman power," to see that where men must die women must take their places as workers. They are doing this the world over with such unexpected ability and success as to give a new status to womanhood. The women of America share with the men of America in the high honor of such a call to world service as never came to any nation before. It is possible that bitter necessity may be added to the call of honor before our work is done.

That this work may be well done, quickly done, done with the least loss of life and treasure, requires the best service of all.

With what conscience then can we persist in a method of industry which, in kitchen service alone, wastes the labor of nine women out of ten? If all house service was professionalized, done by trained specialists with proper organization and mechanical conveniences, we could release the labor power of 80 per cent of our women.

Counting that labor at charwoman's wages, say \$500 a year, allowing fifteen out of our twenty million women as working housewives (this omits those housewives now wage-earners, those too old or sick to labor, and those to whom a year should be given for childbearing and nursing) the released labor of four-fifths of the fifteen, namely twelve million, would be worth \$6,000,000,000 a year.

Their product value would at least equal their wages, another \$6,000,000,000 a year. The saving in cost of food materials, by eliminating both the whole retail expense and the inevitable waste of minute rehandling in small quantities, would be fully 50 per cent. If the average American family now spends \$500 a year on food, and if the saving was but two-fifths, or \$200, there would be another \$4,000,000,000. This gives a pleasing total of \$16,000,000,000 which in an extreme hypothetical case we might save each year.

No such sudden and universal change of system is to be expected. It would not be desirable instantly to eliminate a whole complex business, as the retail food trade. These large estimates are given to show the importance of the food problem, and the enormity of the waste involved in our primitive method of treatment.

The housekeeper herself should realize that her devotion to duty results not in economy, but in waste, not in safeguarding the health of the family, but in maintaining a system of feeding people which keeps our standard of health low, and sees it going lower. The world's gain in health is made in those diseases combated by sanitary legislation; we are losing in what may be called "food diseases." If the housekeeper does recognize her high public duty in regard to the food problem, what can she do to meet it? And what can the food administration do to help her?

As we have experiment stations to establish standards and gather information for our farmers, so we should now establish at least one national food laboratory, an experiment station for the benefit of the housekeeper. Such a laboratory should be in charge of men and women of the highest ability, a staff capable of meeting all demands of this exacting work, for the preparation of food for modern humanity is by no means the simple service we commonly consider it, but is an art, a science, a business and a handicraft. From an authoritative center like this should be distributed accurate information as to food values and prices, with bulletins for special localities and seasons. With an experienced buyer, with the most expert handling of all the valuable by-products of this great industry, now so wastefully mishandled as "garbage," with storage and refrigeration facilities, with such arrangements with dairymen and local market gardeners as would be easy with large and steady orders, with a preserving department to take advantage of surplus materials, and with all accounts carefully kept and freely published, we should at last be in a position to *know* what really is the "cost of living."

Figures could be given on a series of diet lists, all equally wholesome, but varying in materials and in prices. The best and fullest information would thus be available to the housekeeper unable to change her industrial position, as also to all institutions where cooking is done on a larger scale. We should at least have an au-

thoritative standard, a minimum below which no poorhouse or prison would be allowed to fall, and a maximum above which anyone should be ashamed to waste money on eating. From such a center local service kitchens could be established as fast as needed, with intelligent modification as to race or religious customs and personal preferences. On the side of individual initiative the same thing may be done far and wide; but at least in the beginning the sanction of government authority and the reach of government power would be of great advantage.

Now, if anyone asks, "And where is the money to come from to do all this?" the answer is comfortingly simple. The money will come from the pockets of those who buy the appetizing products of these food laboratories, and it will cost them less, far less than it does now. That is precisely the feature of the food problem which is here emphasized, that our present method is not economical as popularly supposed, but is madly expensive.

Look at the food budget of one hundred families who keep cooks: \$30 a month for each cook, \$360 a year per family, \$36,000 for the group. The necessary force of one manager, one clerk, six cooks and kitchen men and two delivery men, with salaries averaging two thousand, would be but \$20,000 a year, a saving of \$16,000. The saving in coal bill or gas bill for kitchen use would be in much greater degree, as would the incidental expenses of all kinds. The cost of the food itself, now perhaps \$30 a week for the family of five and the cook, totaling \$156,000 a year for the hundred families, could be cut in half by proper wholesale buying and the economy of scientific handling in quantity. If the saving was but little over a third, say, the \$56,000, that, with the \$16,000 saved on labor and the other incidental savings in fuel, light, utensils, breakage, etc., it would amount to some \$75,000 a year. If the hundred families were content to accept a saving of but \$500 a year each, there would remain \$25,000, quite sufficient to maintain an elaborate kitchen and two delivery motor vehicles.

A hundred families willing to make this change in living could pay for their new outfit, motors, food containers and all in the first year and after that find their labor expense reduced from \$36 to \$20 a month, their food expense reduced from a third to a half, and the quality of that living improved.

Beyond this direct saving in money we have the far larger

items of the released labor, its earnings for the family, its product for the nation. And all this gain would be greater in proportion to the need of it, the relative saving to our poorest more than that of the rich.

Details of food containers, keeping things hot and cold for hours, should present no difficulties to manufacturers of thermos bottles and fireless cookers. Such, and suitable delivery wagons, are already in use in Europe.

The most important thing is the establishment of authoritative food laboratories to save the mistakes and discouragement of scattered efforts, and the next is for our housekeepers to recognize the imperative duty of the change of method in this industry.

Some difficulty will be experienced, no doubt, from the objections of Mr. Jones, but if the food is really good and he sees himself much richer for the change, he will be convinced in time. More immediately, if the husband and father has gone to the war, the mother at home will be both relieved in labor and enriched in cash. And one generation of children, accustomed to such wiser living, will end opposition forever.

THE RELATION OF THE HOUSEWIFE TO THE FOOD PROBLEM

BY NEVADA DAVIS HITCHCOCK,

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The consumer has been much in the limelight of publicity within the past few years. The consuming public is represented so far as foods are concerned by the housewife. It is, therefore, upon the latter that the searchlight has been focused. There is no problem in which the public is more interested than that of food and I may add, no problem in which the public is inclined to do less except to give advice. At any rate there has been much talk, reams of writing and millions of words. These have been cast before the housewife in numerous forms, offering her advice, hurling it at her, rather, showering her with remedies, heralding her as the one able to solve the puzzle of how to reduce the cost of living, assailing her as false to her trust, calling her attention to all sorts of panaceas warranted

to cure all the ills of soaring prices. After having given their advice, these advisors have washed their hands of responsibility and have gaily gone their way. They have told the housewife what to do to get cheap food. It becomes her responsibility then.

The housewife, equipped with such weapons as "how to use left-overs" and a market basket, has about as much chance of lowering the high cost of living as a baby armed with a powder puff has of frightening a burglar. The truth of the matter is that the food problem has reached such gigantic proportions that under our present system the consumer has no power whatever against organized business. The produce of our farms passes like a shuttle, weaving in and out of numerous threads before it reaches the hands of the housewife. Business interests in our cities have been organized. We have wholesale and retail associations made up of jobbers, commission men and retail grocers. These in turn are connected with railroad interests, manufacturers and financial interests. The individual producer is at one end of the line, the individual consumer at the other. They both have to dance when the organized interests pull the string. The conflict between the housewife and high prices does not even approach a David and Goliath conflict. One was brain pitted against brawn, but the other is only an individual interest against collective brains and financial brawn. It is at best but a pigmy attempt.

Every bit of the expense connected with foods has to be borne by the consuming public. And, as affairs are conducted at present, the housewife is helpless, no matter how much she may wish to do her part. As an example there is the recent attempt to lower the cost of food by eliminating the delivery system, or by placing it on a charge basis. Although many women signified their willingness to do with fewer deliveries and to pay a five-cent charge provided the price of goods were lowered in consequence, deliveries were cut out entirely or were made at *ten* cents without the housewife perceiving any benefit whatever to herself. She has to bear heavy burdens and use more time without receiving any appreciable benefit. There has been an abuse of the delivery but the housewife has been the victim rather than the offender because free delivery at all hours has been held out to her as a bait for her patronage. It is neither wise nor just to attempt to punish her by taking away delivery service altogether, or by charging her ten cents for it. It requires too much

time and too much strength when the housewife attempts to carry all her food home. It is returning to the dark ages. One might as well go back to candles and to backyard hydrants, because it would reduce light and water costs.

In conserving food after it comes into her hands the housewife can do a great deal. That, however, is but one phase of the problem. There is an old proverb which says "First catch your hare, and then cook it." This is most applicable to the situation. We have urged women to can and to dry food, but no effort has been made except in sporadic cases to get food before them that they can afford to buy and conserve.

The true relation of the housewife to the food problem may best be understood if one considers her actual responsibility and her limitations. This responsibility of the housewife includes three things: wise food selection, proper preparation and adequate conservation.

HER RESPONSIBILITY

To make a wise selection one must have a knowledge of food values, based upon the principles of nutrition. There must be the proper grouping of foods, so that all the necessary elements will be given in the right proportion each day. Then one must have a knowledge of markets, of food prices and of seasonal foods, in order to get the best food for the least money.

The next step is the proper preparation in order that food will not be wasted in sink and garbage pail. The housewife also must know the amount of heat and the length of time required to cook food. Otherwise there is great possible waste in food preparation, for many times nearly a third of the nourishment is lost, in meat, for instance, by overcooking.

The third division is adequate conservation. The housewife must look after the refrigeration, must see that foods are kept at as low degree of temperature as possible. One phase of food preservation is in keeping the foods covered and away from contact with other foods. Then there is the science of using left-overs, *i. e.*, in combining remnants of food so that nothing will be wasted. These are the essentials of the responsibility that each housewife ought to bear toward the food problem. That the vast majority of women do not know how to do all these things perfectly arouses biting sarcasm from many quarters. But if one will stop to consider the limitations

with which the housewife of today has to contend, much that seems reprehensible in her conduct will be considered excusable.

HER LIMITATIONS

Just why the housewife cannot rise to the full responsibility that is laid upon her will be apparent at once if we go back a little while and study what her preparation has been to carry out this responsibility.

In the first place it is only within recent years that any of us have known how great a part the food problem plays in the development of the individual, the home and the nation. A woman who could cook a delicious dish, serve an attractive meal and give to her family full satisfaction in taste and quantity was considered as having done her duty. But with the advance in science and the research work that is carried on, a new phase of the food problem arose. The housewife was called upon to conserve the health of the family as well as the family income. In other words, she must not only learn to be an economical, wise cook, but she also must be an economical, wise buyer of foods. Now although this responsibility has been laid upon her for some years past, very little has been done to help her to carry that responsibility wisely and well.

For a long time farmers have been instructed through agricultural colleges, experiment stations, farm agents and the public press in regard to the necessity of knowing how to feed and care for their livestock. Numerous pamphlets, bulletins, articles and books were written and put upon the market so that any farmer that wished to do so might be able to know how to care for his flocks and herds. On the other hand, very little was done until recent years to give the housewife proper instruction in regard to what she must know about foods from a scientific viewpoint. Of course, we have had in our public schools, for fifteen or twenty years, a system of instruction in domestic science, but much of this instruction has been meager. By this I mean no attack upon the work done in the public school at all. I simply wish to call attention to the fact that domestic science and home economics are of so recent development that the practical application has not been worked out long enough to enable the average housewife to have had that instruction. Cooking, as it is taught in the public schools, is in its mere infancy so far as the average housewife is concerned, and, of course, in private schools

there has been much less progress. In women's clubs and charitable associations some attention has been paid to the subject, but no definite program has been carried out along both practical and theoretical lines.

We hear a good deal about what has been done by women's clubs in regard to the food problem, and much has been done, but it is more along the line of clean foods and pure foods than it has been in regard to food values, food preparation and food conservation. The fundamental principles of economics, upon which the food problem really rests, if we are to have enough food to feed the masses in our great cities, have not been touched upon to any extent either in public or private schools, or in women's clubs or organizations. In fact, political economists, with a few exceptions, have not given this subject the attention it deserves and the attention they must necessarily give to it in the future through circumstances that have arisen since our entrance into the great war.

While the consumer has been called upon and has responded in many cases to do many things, no attempt at protection against the dangerous results of inefficient transportation and distribution and food speculation has been given to the housewife until the food control bill was passed in Congress and Mr. Hoover became Food Administrator of the United States. In fact the great majority of business men and the members of different organizations of the public in general do not yet realize the impossibility of the consumers' doing anything more than merely offering the slight resistance to the flood of the cost of living with the weapon of the market basket and the boycott.

Take the question of the boycott, for instance. It is easy enough to say to women, as was done last winter in New York, "Do not buy eggs. Boycott the egg and bring down the price." And the consumer, willing to do her part, followed this advice. What is the result? The storage houses can hold eggs until they get the price that they wish at very little extra cost. The poultryman, on the other hand, producing eggs in the winter time at a high cost of feed and with much hard work, loses his market for eggs on account of the boycott. As a result he becomes discouraged, reduces his flock, and sells off his breeding stock. The cold storage dealer sells his eggs when the first effects of the boycott have waned at the price he would have received if there had been no

boycott, and loses practically nothing. The consumer has done without eggs and has perhaps lowered the cost of eggs two or three cents a dozen for a short time without stopping to reflect that by cutting out the market for the poultryman she has made it impossible for him to keep on with his usual number of hens, and so for that reason the next year there will be fewer eggs and higher prices. There was a time perhaps when the boycott could have been used without having any particular effect upon the market, but now it becomes a dangerous instrument in the hands of those who do not understand the economic principles that underlie production, transportation and distribution.

Consumers have been urged to take their market baskets, go out and buy their food and carry it home. The market basket is a splendid thing which ought to be carried oftener than it is; women ought to be urged to go to market and select their food, but not without proper protection against food speculation and inefficient transportation and distribution. If the municipalities and the state do not make it possible for food to be brought into the city without waste and without rehandling, if there is no efficient system of distribution by which this food is carried directly to different parts of the city and distributed under regulations which cut out food speculation and combination in food prices, the market basket will have no effect at all in reducing the cost of living.

NOT A FREE AGENT

The housewife cannot always exercise her own judgment in regard to food for her family. There are limitations. In the first place, the individual taste of the family must be considered. We have not yet arrived at the condition of society when one can prescribe a certain kind of food for all individuals. In fact food that is not relished very often does not give the proper nourishment. Of course I do not mean to say that much cannot be done by the house-mother in directing and guiding the tastes of her family. Much can be done, but only to a certain degree. She is bound to consider what her family likes if she wishes to make her house a home and not merely a place where food that will support life is given out. We all know that beans have just about as much protein as meat, and yet if your family will not eat beans, what are you going to do? Or if your family refuses to eat beans oftener than once a week,

what solution of the problem can you offer? One cannot use force; the house-mother of today cannot go around with a bean pot in one hand and a club in the other.

Then in addition to that is the effect of food on the individual, which is something that must be considered as well as the taste. For instance, there are food idiosyncrasies, and these are more common than one would suppose. There are a number of individuals who cannot eat eggs without becoming bilious. Those who have rheumatic tendencies cannot eat tomatoes, grape fruit, lemons, strawberries and rhubarb. Milk does not agree with some individuals. Others are poisoned by fish.

The consumer also must have the coöperation of the family. Even where members of the family are *able* to eat everything, unless the family *will* eat everything, the consumer is much hampered in providing a well-balanced ration for her family at a reasonable cost. The head of the family himself often is the stumbling block. A man who earns three or four dollars a day at hard work naturally demands that his wife give him what he calls "good meals." Having earned his bread by the sweat of his brow he thinks he has a right to choose the kind of bread he wants to eat, and having the balance of power, the pocketbook, he makes his wishes rule the house. The professional and business man very often follows the same habit and demands that certain kinds of food be served, and so the housewife has to buy that which is demanded, and by thus buying, is not a free agent in selecting foods. She is obliged often to buy food at what she considers an exorbitant price which she would not touch if she were at liberty to do as she pleased. Very often men who complain of household bills will not agree to do without the things that make those prices exorbitant.

As a result, few women have had the vital interest in the food problem that they should have until the present situation in regard to food conservation has arisen. One of the blessings that may come from this great war evil is that a widespread interest in foods has been aroused. Up to this time few club women have been enthusiastic in regard to the subject. Those who have worked along these lines foreseeing the vision of the present situation, felt discouraged many times owing to the lack of interest among their sisters. Most clubs have had some program in regard to foods and home economics, as I have said, but very few clubs have taken up

the matter with the same enthusiasm as they have had in getting playgrounds, recreation centers, proper legislation, public health and sanitation, political equality and civic improvements. Music, literature and art have all taken precedence of this vital topic. A musicale, an art exhibition, or a social tea would draw crowds when a food demonstration would call out handfuls. Even at the outbreak of the war, the Red Cross, the Emergency Aid and the Army and Navy League were organized and doing effective work before the food problem had been touched. It is only with the entrance of the government into food conservation and the appeal to the women of America to do their patriotic duty that the foods have received anything near their proper attention from the majority of women.

A great deal needs to be done for the housewife if she is to fulfill her duty. It is time to see that she has the right kind of markets.

She also should have full opportunity for practical instruction in home economics. I do not forget the work that is being done along that line by the Department of Agriculture at Washington, as well as by the extension work in our state colleges. Through these agencies valuable literature has been sent out and useful cooking and canning demonstrations have been held. But they have been of more value in the country districts than in our great cities because they have not been developed along lines that will reach the women of the city. A definite and concerted action should be taken at once to get proper instruction which will make it possible for women everywhere to have the necessary information. This is most important because just now there is great danger that the American woman in her endeavor to save food for patriotic reasons will become hysterical in her efforts. Unless she knows which foods are growth promoting and energy giving, she will make food selections that will injure the health of her family. Clubs and associations of all kinds should take up a definite program for giving housewives an opportunity to know these things and their relation to the welfare of the family.

A simple practical course in homemaking should be taught in the grades of our public schools. Food values and food groupings should be concretely illustrated by having models of meals that embody them. Artificial groups of foods might be a part of the equipment of schools just as much as blackboards are. Practical

instruction in food selection and preparation ought to be carried through the grades so that by the time the girls finish the eighth grade they will know how to buy the right kind of food at the best possible price. They also will know how to cook the food and serve it appetizingly. They will be able to select foods on a calorie basis and be as familiar with proteins, carbohydrates and vitamins, as the housewife of today is with soda and baking powder.

The crux of the situation in regard to the cost of foods rests upon abundant production, proper transportation and efficient distribution. This year has proven what can be done in the way of increasing production, but so far the consumer has not reaped the full advantage of the abundant crops because the transportation and distribution of foods are still in an antiquated form. The consumer should be directly interested in improving these conditions because the prices of foods in the future will depend largely upon their proper distribution now. The producer must get a fair return for his labor and investment. The consumer should get food at reasonable prices without paying toll to five or six middlemen. Right here is the need for economic study of foods. It is the duty of each city and state to stop dilly-dallying and do something. Terminal markets should be established in connection with regional markets that food may be distributed quickly and effectively to every part of the city, eliminating the present glut at one part and scarcity at the other.

A word about curb markets. There is much talk of curb markets as a solution. The time has gone by when we can expect or demand the producer to be distributor and retailer on the street. The nearby truck farmer may find it profitable to come into the city and sell his produce on its streets, but the student of economic principles questions whether it would not be better for the farmer to specialize in farming and leave the retailing and distributing in other hands. Coöperative societies are already being formed among the farmers which promise success. The next logical step would be to organize coöperative societies in the city which would be distributing agencies for the coöperative societies in the country. There would be a reciprocal relation which would be highly advantageous to both.

The problem of getting enough food to feed the family is most serious in the eyes of housewives all over the United States. There

is consternation in the minds of housewives as they look forward to the winter months. Women have responded nobly to the call to help produce and conserve food. Our abundant harvests and stores of canned and dried foods prove that. Women are doing their part in food economy so that there may be no waste in garbage pails. But that has had no appreciable effect in lowering prices except for a few vegetables. The one thing that prevents utter discouragement is that the President of the United States has been enabled to appoint a food administrator with full power. It is to Mr. Hoover, as representative of the federal government, that the housewives are looking for relief. They turn to him for protection against food speculators by making it a crime that ranks with treason for any individual or corporation to hoard or manipulate foods so that they are sold at exorbitant prices. They look to Mr. Hoover to see that food prices are based upon actual cost of production and distribution, including all return to labor and capital, but with no excess wartime profit. They look to Mr. Hoover to make an example of such men as those who have dumped loaves of bread upon vacant lots and have set fire to the bread—bread which thousands of women are doing their best to save. The consumer also looks to each state and city to do its part in helping to solve the food problem.

The development of the United States Bureau of Markets is proving of great value from an educational and publicity viewpoint. Some states have also formed market bureaus which have given an opportunity to do good work. The trouble is that in too many cases these bureaus have no "teeth" to make their influence felt. The consumer needs a bureau of foods and markets with power in each city to which she can appeal. This bureau should be placed on the same footing as the bureau of public health, public safety and public utilities. There should be some local court of appeal to which the consumer can address his complaints when situations, like the one existing at present, arise. For instance women are clamoring to know why they have to pay 20 cents a quarter peck in West Philadelphia, or at the rate of \$3.20 a bushel, for tomatoes when the crop is so abundant that the government is calling upon women to volunteer for work in canning factories to save it.

As a consumer, and representing other women interested in the food problem, I am most earnestly asking for the assistance of all in heeding the appeal and standing with the housewife; in urging

upon cities the immediate need of establishing terminal markets connected with regional markets; in developing trolley freight, motor truck and parcel post deliveries so that nearby products may be brought in cheaply; in forming coöperative associations; in urging educational development in practical home economics in the grades of our public schools; in demanding that all city nurses and social workers be required to have training in home economics before they are ready to go to work, and in this way may help to eliminate some racial prejudices through health centers and social centers.

The food problem has become not only the problem of the consumer represented by the housewife but is the problem of men and women in all walks of life. Only by their coöperation can there be any stable solution.

FOOD CONSERVATION IN NEW YORK CITY

BY LUCIUS P. BROWN,

Director, Bureau of Food and Drugs, Department of Health, New York City.

In telling what has been done in the city of New York for conservation, it is necessary to tell you that the Food and Drugs Bureau of the Department of Health has a force of some ninety inspectors within the city. This force is divided into two broad divisions as far as the work is concerned. One of these divisions works with the retailer in maintaining a sanitary condition of the stores and the quality of the food sold by the grocer, restaurant people and delicatessen man and allied callings. The other division of the force looks after the food in a wholesale way and for this purpose is divided not along geographic but along functional lines.

One squad from the latter force meets the city's food as it enters the city and halts there all unsound material, forcing, when any consignment of food is found to contain both sound and unsound material, the separation of the sound from the unsound portions. It has been found by experience that one of the most effective ways of using food materials which are in part unsound or in which the unsoundness has not proceeded to its ultimate term of decay is to subject it to that form of camouflage which is so readily offered by

making it into preserved material. This is of course particularly true of fruits, which can be made into preserves, jams and jellies. Consequently another squad has been formed which has for its function the inspection of food factories of all sorts. This squad likewise looks after goods which are stored in dry and cold storage warehouses. The district men are able to point out those forms of spoilage which occur as the result of retail conditions. Through all these sources of information we are able pretty thoroughly to identify causes of spoilage due to transportation and distribution defects or conditions and to form an excellent idea as to what causes of spoilage, due to conditions existing on the farm, are readily preventable. The information thus collected has enabled preparation of a somewhat systematic analysis of the causes for spoilage which it seems worth while to reproduce here.

Speaking broadly, the efforts of the New York Health Department have been directed towards correcting such of these conditions as occur within the city, to ascertaining what the reasons for these conditions were when they have occurred without the city, and notifying persons responsible for such decay-producing conditions to the end that they might be minimized in future; and when foods have actually arrived in the city in lots, parts of which have been decayed, to procuring a use for them through the separation of the unsound portions.

The city's laws provide for the destruction of unsound foodstuffs and the unpleasant necessity of such destruction, if we are to do our duty, has in these days of high foodstuffs, greatly impressed every member of our force with the necessity of promoting all possible conservation.

It has been estimated that the city of New York consumes in the neighborhood of five billions of pounds of food per annum, which is consumed by about five millions of people. A very large portion of the food for the whole metropolitan district of some seven million people passes under the eye of New York City's Health Department, while New York is the entrepot for a very large portion of the whole northeastern part of the United States. During the winter and spring of the current year, the condemnations of foodstuffs were at the rate of about 24,000,000 pounds per annum, which is about five-tenths of 1 per cent of the total food supply. Nine-tenths of this amount were perishables, that is to say fruits and vegetables, which, of course, form less than 20 per cent of the average dietary.

PARTIAL ANALYSIS OF FOOD-WASTE PROBLEM

Prepared by LUCIUS P. BROWN, Director of Bureau of Food and Drugs, Department of Health, New York City.

WASTES OF FOOD OCCUR IN ITS HANDLING AND UTILIZATION FROM THE FOLLOWING CAUSES

I. In Producer's Hands.....	A. On Farm.....	1. Growing conditions.....	a. Unfavorable weather, weakening plant. b. Insect pests or micro-organism infection.
		2. In harvesting.....	a. Excessive rains or drought at time of picking. b. Shortage of labor. c. Too long storage before shipment. d. Storage under unfavorable conditions before shipment.
	B. From Woods and Waters.....	3. Poor packing.....	c. Too early harvesting. d. Holding of cars too long because of shortage of labor. e. Due to unskilled labor. f. Due to shortage of labor. g. Rough handling of filled packages. h. Unusable or poorly made containers. i. Poor grading.
		4. Shipping defects.....	a. Undue holding of cars to secure carload freight rates. b. Overloading of cars. c. Poor judgment or carelessness in placing packages in car
	C. In Factory.....	1. Spoilage from insanitary conditions. 2. Spoilage due to unskilled labor or labor shortage. 3. Insufficient number or poor quality of containers. 4. Failure to use by-products.	
II. In Transit (in hands of transportation companies).....	A. At Shipping Point.....	1. Shortage of cars. 2. Congestion on loading trucks.	a. Poorly designed or improper cars. b. See also 1A-4c. c. Trains skipping icing stations.
		2. Defects in handling.....	a. Refrigeration defective or lacking altogether. b. Cars not rendered frost-proof. c. Due to poor management. d. Due to strikes, etc. e. Due to floods, storms, etc.
	B. In Handling Trains.....	3. Delays in transit.....	a. Due to track shortage. b. From undue length of demurrage. c. Strikes or other labor troubles. d. Due to shortage of storage place for goods.
		1. Congestion at piers or other terminals.....	a. Through slack management. b. To profit by market changes (at consignee's order).
	C. After Arrival at Destination.....	2. Ill-advised reassignment. 3. Undue holding of cars.....	a. Wholly unsound. b. Partly unsound and overhauling not profitable. c. Partly unsound but facilities to salvage unavailable. d. Market conditions believed to be unfavorable.
		4. Abandoned by consignee.....	
		5. Rough handling at terminals.....	

- III. In Distribution (from hands of transportation company to consumer).....
- A. Wholesale.....
1. Holding too long.
 2. Inefficient cars.
 3. Poor storage facilities.
 4. Goods stored in poor condition.
 5. Overstocking.
 6. Damage by rats, insects, etc.
 7. Failure to remove promptly from terminals.
- B. Retail.....
1. Carelessness or inefficiency.
 2. Through fancies of customers.
 3. Due to trimming, etc.
 4. Overstocking.
 5. Exposure to dust and insects.
 6. Stale bread thrown away.
 7. "Slick" business methods.
 8. Portions too large and too many gratis "side-orders."
 9. Too much variety in dishes or single items, e. g. food.
 10. Overstocking.
 11. Influence of custom, e. g. serving sugar on table.
 12. Improper disposal of waste products, e. g. burning of garbage.
- IV. In Kitchen.....
- A. Hotel or Restaurant Kitchen.....
1. Unbalanced ration.
 2. Letting good food go into garbage pails and sinks.
 3. Poor facilities for and ignorance in handling foods.
 4. Poor cooking.
- B. Private Family.....

Wastes in the Food Supply, due to Economic Reasons and resulting therefore in loss of money to the consumer, occur in Trade Channels in part from the following causes:

- A. No terminal markets.
- B. Duplication of marketing facilities.
- C. Expensive cartage.
- D. High retail delivery costs.
- E. Unnecessary credits.
- F. Extravagance in service and display.
- G. Failure to buy home-packed goods of equal quality.
- H. Failure of retailer to use proper merchandising methods.

Most of this material is absolutely unfit for any use. Considering the large territory served by New York City, the amount of food which it has been necessary to send to the dump is surprisingly small.

The form of effort in conservation which appears to offer the most promising results is that which is expressed in letters to shippers, transportation lines, etc. Thus, a Japanese gentleman in California was on September 12 notified that five crates of black figs shipped by him had become unsound because they were packed in flat crates instead of the regular fig carriers. A gentleman in Kentucky was notified that 10 per cent of a shipment of broilers had become unsound because this poultry was not properly cooled out before packing. A farms-company in Florida was notified that 206 barrels of potatoes which were 50 per cent unsound had not been overhauled by the consignee, as should have been the case, and that the cause of damage was the packing of same while wet in double-headed barrels. The response to such letters is usually most satisfactory and prompt and they have been productive of much benefit.

When goods have arrived in consignments partially unsound, the aim of the department has been to procure a use for them if possible. Many consignments have been sent to the charitable institutions under city management. More important have been the efforts of a group of women who have taken from the railroad company partially spoiled shipments abandoned by the consignee, have separated sound from unsound portions by means of cheap or volunteer labor, have sold such portion as there was immediate sale for and have canned or otherwise preserved the remainder. It is obvious that such a group may be very busy without making much impression on the total food supply but their labors have an excellent moral effect and they do succeed in saving a certain amount. In all this work we have had most hearty coöperation from the dealers in foodstuffs within the city, and I want to take this occasion to say that I have found quite as high an average of integrity, ability and patriotism in this group as in any other group of equal size.

In addition to these methods of conservation, we find it profitable to collect certain statistics. Working together with the Bureau of Markets, United States Department of Agriculture, we are able to pretty thoroughly cover daily receipts of foods. The value of an accurate knowledge of this supply is evident. We like-

wise collect daily prices, wholesale and retail. The markets squad first mentioned turns into the head office by telephone early every morning the figures at which actual sales have been made at receiving points during the morning. In addition to this certain district men telephone to the office retail prices during the morning and by ten o'clock these are compiled and ready for use in the afternoon papers.

It is obvious that if the papers will print these figures, the discriminating and careful housewife will be able by a study of them to buy much more effectively. But unfortunately the average housewife does not appear to have time to give to such study, and a system is now being tested by which it is thought that such news can be put into attractive form, readily available to even the most inexperienced woman. Such should be the aim of other cities desiring to inaugurate a similar service. In the city of Philadelphia, a somewhat better plan than in New York has been adopted, but even this plan does not appear to thoroughly fit the case.

It has been most interesting, in watching the retail prices as shown up by this inquiry during the past four months, to note how they differ in different sections of the city. The causes for this are not far to seek. One of the chief things is the difference in service demanded, another is the differing overhead charges, while still a third is dependent on the demands in living of the merchants themselves, which are again dependent in large part on the section of the city in which the merchant lives. The pushcart man, of whom there are some twelve or fifteen thousand in the city of New York, is naturally an important agency of retail distribution and is a great stabilizer of prices. He is satisfied with a very small profit and, because of this small margin, is able to make a quick turnover. He hires his cart from one of some 150 so-called pushcart stables for a small sum per day and ventures forth upon the streets more or less like the old-time trader who carried his argosy to distant lands. The pushcart man may be a merchant of food today, of hardware tomorrow and of clothing the third day.

Looking now to next year, I want to make the suggestion that because of the demand for shipping in the Atlantic, the growers of perishables in southwestern Europe and in the Western Islands are largely cut off from their ante-bellum European markets. This will force them to seek sale for their products in the United States.

Because of the difficulties of shipping such perishables under war time conditions, a large proportion of such shipments will unquestionably arrive in poor condition, so that they will not return commercially the cost of salvage and the duty. Whole shiploads are sometimes affected in this way. It is desirable that some arrangement be made with the Treasury Department by which, after the consignee has abandoned such shipments, they may be salvaged by volunteer labor and the duty on the salvaged portion remitted. The remainder will, of course, be destroyed. This is a matter which will be of importance to the whole Atlantic seaboard and should be looked after at once.

Finally, it seems to me that there cannot be too great a development of the process of dehydration of vegetables. The great desiderata, aside from the obvious keeping down of cost, are quality of product and the finding of an outlet for it. The two are necessarily intimately connected. Most of the material at present on the market is not of a sort to commend itself to a prospective new consumer. It is noteworthy that heretofore, except in Germany, there has been no sale for such products except in war time, save in very limited amounts to camps or industrial or mining operations in sections remote from agricultural areas, carriage to which would be prohibitive on the fresh products. It is necessary that the dehydrated products when cooked should be little, or not at all, changed in taste and appearance from the fresh product. The obtaining of material of the required quality is entirely possible. During this winter all possible effort should be placed on the location of cheap and effective dryers in sections furnishing sufficient supplies of the raw material.

ACCOMPLISHMENTS OF BOYS' AND GIRLS' CLUBS IN
FOOD PRODUCTION AND CONSERVATION

BY O. H. BENSON,

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I am glad to assure you of the interest and coöperation of Secretary Houston and his food army in this food convention and in its deliberations. We count it a great privilege to present for your consideration the problem of our *boys and girls* in this world program of food production and food conservation as related to the world war and the welfare of nations. The present international crisis is rapidly bringing us to a more complete realization of our world citizenship and the common brotherhood of man.

Boys and girls have always played a serious and important part in the great problems of war and peace. The present crisis will furnish to our junior citizens great opportunities for manly and womanly service of all kinds. President Wilson has called them as definitely into his army as he has the men who wear the official naval and military uniforms. Uncle Sam's food army now numbers over two million boys and girls who have enlisted for full patriotic service during the war and who have added to their oath of allegiance to the flag the following consecration pledge:

"I consecrate my *head, heart, hands and health*, through food production and food conservation, to help win the world war and world peace."

This pledge is just another patriotic expression of the meaning of the Boys' and Girls' Club emblem known as the 4-H emblem. Its peace time meaning is "The Equal Training of Head, Heart, Hands and Health in all Farm and Home Activities."

The splendid armies of *boy scouts, girl scouts and camp fire girls* have also enlisted under the banner of food production and food conservation, and are diligently working out their slogans of feeding soldiers and saving for the greater need of our nation. I invite your interest and coöperation in the program of enlisting more of the 23,000,000 children of school age in this food army; then, after the boys and girls have volunteered, let us see that organization, encouragement and leadership be given to this division as is given

to the war and navy part of President Wilson's army. Did you ever stop to think of how great might be the results of boys' and girls' work in food lines, if their work could be as well supported and directed as are the soldiers of a nation?

Last year, 1916, it cost the federal government, states and local people 79 cents per capita to supervise, direct, instruct and encourage the boys and girls in food production work. As a result they produced an average of \$20.96 worth of food for the nation, thus making \$20.17 net profit on the investment, a piece of work which was the result of encouragement and proper direction throughout the year. Of course, we all understand that this economic measurement is by far the lowest value we can place on the work when we compare with it the vocational guidance and training for the future and the many other social and educational advantages.

Our boys and girls, in addition to producing "food bullets" to help fight the central powers, have organized to wage a relentless and effective war against all abnormal prices on necessities of life, against starvation, weeds, insect pests and disease germs of every type.

The following report taken from 1916 statistics will show the estimated annual loss to the nation due to common enemies of both plant and animal life:

SOME ENEMIES OF AMERICA

Estimated total losses due to all animal diseases.....	\$212,000,000
Estimated loss of cattle mostly due to diseases.....	177,750,000
Estimated loss of cattle due to blackleg.....	27,551,000
Estimated loss of sheep due to various diseases.....	21,184,000
Estimated loss due to hog cholera.....	32,502,000
Estimated loss of farm crops, due to insect pests.....	700,000,000
Loss due to weeds.....	300,000,000

DIRECT ENEMIES TO HUMAN LIFE

Estimated Annual Loss

From tuberculosis.....	80,000
From preventable colds.....	55,000
From intestinal diseases.....	60,000
From pneumonia.....	50,000
From typhoid.....	16,000

The above report challenges serious thought and vigorous action on the part of every member of our junior citizenship.

Look up the records of the Civil War or of all other wars fought

in this or any other country and you will find that boys have not only been at home to take father's and brothers' place on farms, in factories and industries but have gone to fight the nation's battles on the very firing line and have done their job along with the men in a big way. The Union army during the Civil War had over 4,051,500 boys, ranging in age from ten to twenty-one years, over half of these under eighteen who offered and gave their lives in the service of the nation directly to fight with gun and other devices of warfare. We may safely assume that the Confederate army had even a greater number of boys. It is estimated that over eight million boys under twenty-one years of age fought in the Civil War in the two contending armies.

If we knew the records today of the European nations who are now at war, we would be alarmed at the fact that a large percentage of those now fighting and who have been fighting are mere children under eighteen years of age. The following table will furnish some interesting studies in connection with the children in service during the Civil War:

BOYS MEMBERS OF THE ARMY OF THE NORTH DURING THE CIVIL WAR PERIOD

<i>Age (years)</i>	<i>Number</i>
10	25
11	38
12	235
13	300
14-15	105,000
16	126,000
17	613,000
18	307,000
18-21	1,900,000
Total 10-21	4,051,598

We were all pleased with President Wilson's famous message at the opening of the war with Germany in which he stated so definitely that two types of soldiers were needed; one on the battlefield and in the trenches, and the other in the field of food production and food conservation. In these, his famous sentences, farming, home making and common industry were all glorified and dignified; the making of war gardens, the conserving of food and the manufacturing and mining of our world necessities by his tokens became privileges of all American patriots.

You will be interested to know that there are today more war

gardens owned by the children than was ever true in years gone by. Boys and girls who enlisted in this army of food production are still in the game, vindicating their oath of allegiance to the country and proving that they purposed real achievement when they entered.

Our President often says to the boys and girls when on their annual visits to the White House, "Achievement is the only patent of nobility of modern times"; and then he turns and aptly suggests, "That such being true, you of the farm and the home constitute the nobility of our nation." It has been a great inspiration to me to witness such scenes and note how these young champions of soil and kitchen straighten out and study with a proper perspective this inspiring message of our first citizen of the land.

The achievements in food production and food conservation for 1917 must be accredited to our boys and girls as well as to men and women. As most of you know, the program of food work with boys and girls did not start on June or July first nor was it at all the result of free press reports, printed instructions, or as a mere response to a call to arms after the declaration of war.

You and I who have thought carefully, who have studied well civilized society, know that you cannot educate children or even train them to grow economic gardens or deliver them at the end of the year as a worth while investment, unless there has been education, leadership and direction by the people in that community, in the state and in the nation, for several years prior to the beginning of a war program. The 3,000 county agents, 1,000 club leaders and several hundred women agents, thousands of public school teachers, scout leaders and others have been educating for this 300 per cent gain in food gardens for a number of years.

I listened some time ago to a European who said,

We people of Europe made three serious blunders when we started in this world war. First, we in a measure *let go of education* and advised our schools to close, and they did close in many instances. Second, we did not appreciate the importance of starting hostilities in the cornfields, potato patches, gardens and in the kitchens, on the some day we started hostilities on the battle front. After we had been fighting for months and for two years, then we began to marshal our forces of food production and food conservation, but we have lost the most important part of our preparation—the most effective period. Third, we have sent our tender boys into the trenches instead of into harvest fields and food production activities which means that after war is over we will people Europe with women, old men, crippled and a hopelessly depleted male population to propagate our kind and to rebuild our institutions and industries.

We started, thank God, in a better way in this country and with appreciation to our wise chief executive we started in both war and food preparation on the same day, three lines of national activities, and we will live to see the day, I trust, when we will understand more fully the wisdom of thus speeding up hostilities in all important lines. The army and navy went to work, our homes in food conservation went to work, all of us engaged in a family job of production, conservation and real war.

We make a serious mistake, friends, in these days by trying to segregate by sex, important work and especially war jobs. Our food conservation program demands the entire family for every day in the year and we men must be just as conscious of the food conservation program as we expect our wives to be. We should and must have a direct part in the conservation work. Let us "Hooverize" men and children as well as women.

Then, too, in the bigger business of organization, in these things that have been so aptly and ably presented by one of the speakers about the women getting into productive enterprises, we men make a serious mistake in thinking that women cannot be trusted to handle business matters, and some think women are incapable of managing business enterprises. As an extension worker for Uncle Sam I have learned that one woman at least does the business of the family perhaps better than the old man could do it. There is no war program that is confined to sex, man or woman. But there is a war program in every community that belongs to both and should of course be a family enterprise.

Our boys and girls should by all means function economic, educational and industrial efficiency during the war, of course, without abuse to the child labor program, but with a definite gain to their educational efficiency in school, communities, homes and churches, so that all may be builded into a great world-wide power for good.

We, as parents, teachers and leaders, patronize our children too much. What I mean is this: we assign to them kids' jobs in a kid's way, then we wonder why they are unable to see the pleasure in work as we see it. They see nothing but "stingers of unrequited toil"—hard work. It is full of aches, pains and discomforts from early morning until late at night, because we have given them everything about work except mental rejuvenation, heart interest, ownership contest and a manly respect for achievement in their work. We have given them every thing else but the things most needed.

Let me illustrate just what we mean by the transforming of drudgery into interesting work. Meet a boy on the street and say, "Hello, Jim, how are you this morning?" "Pretty well, thank you." "Listen, Jim. I have a little bit of a job I would like to have you help me do today. Any little boy can do it, Jim. It won't make you tired, Jim. Come on now, won't you do it for me, Jim?" And Jim, a true American boy, straightens up and replies, "Naw. I got another job," and leaves you holding the bag.

Mr. County Club Leader comes along with a big appeal, and knows that every boy must not only be trusted but must each day be given the big incentive to tackle a man's job. "Hello, Jim. How are you, my *young man*?" At once the "young man" expression has an electrical effect and the boy knows that he has been properly addressed. "Jim," says Mr. Club Leader, "I have a hard job that I must have completed today. It is a big job. It will take the brawn, brain and muscle of a real man, a fellow who can tackle, who can stay in the game and who can finish the job. Jim, can you help me find a man for this job?" Jim looks around in a bewildered way for a moment, finally comes up and modestly says, "Can't I help you do it?" The job is assigned and he is justly surprised at his manly and efficient handling of a difficult piece of work.

It may be a war garden, a wheat substitute program, or what not. If it is Jim's job and if granted the right appeal, he will enter with the spirit of a football star and will play the game until he makes a touchdown; and what is more, he will show results as a real man, and you will be proud of his achievement.

In 1916, we had about 350,000 boys and girls who enlisted in Uncle Sam's food army a year before war was declared. We had a little less than that in 1915, a little less than that in 1914, and so on down to the year of 1910, when there were only a few hundred volunteers in this food production and food conservation army; but they have been gaining ground annually, not only in the size of the army but in the number of projects undertaken and in the amount of food produced.

Let me give you some concrete illustrations of results in this "Made in America" boys' and girls' crusade.

The state coöperative club leaders conducted 1,534 demonstrations in home canning and food conservation. At these demonstrations there was an attendance of 20,860 club members, 53,565

men and women and 14,152 boys and girls *other than club members*—a total attendance of 88,577. These same club leaders visited 12,898 club plats. This is in addition to the local supervision conducted by 4,367 volunteer club extension leaders.

A total of 2,083,606 pieces of printed follow-up instructions were furnished to club leaders and club members during the year. This material was about equally divided between that supplied by the state colleges of agriculture and the Department of Agriculture and constituted in the main instructional matter prepared for boys and girls enrolled in the regular project work, written with the idea of reaching the boy and the girl rather than the adult reader.

In 1915, 209,178 club members were enrolled, 10,419 over the enrollment secured for 1916. This reduction was due to an effort on the part of state leaders to reduce the enrollment and intensify the work so that more direct attention could be given club groups and the individual members. It is interesting to note, however, that 57 per cent of the 1916 enrollment consisted of members who had belonged to the 1915 clubs. Owing to lack of funds and leaders, eight states reduced their total enrollment.

There has been a steady tendency towards organizing members into club groups and having club members work in groups as well as individuals. Most of the states reported last year that they were working definitely to perfect the work through organized club groups with leaders in charge. Paid coöperative leaders spent on the average of 29.35 per cent of their time in office work and 70.65 per cent of their time in field extension activities.

In the corn club work 985 clubs were organized in twenty-four states, with an enrollment of 14,400. Final and complete reports were made by 3,918 members, who cared for 9,711.99 acres. On this acreage, members produced 523,110.8 bushels of corn, or an average yield per member of over 100 bushels to the acre. To produce this corn, the members invested \$142,867.37, including rent of land, cost of members' own labor and all other items of expense. The average investment per members making final complete report was \$36.46.

Twenty-three states organized garden and canning clubs. The 1,160 garden and canning clubs had an enrollment of 24,254 members of which 7,903 reported having canned 201,305.5 quarts of products, an average of 25.4 quarts per member. The total production cost

to members reporting was \$28,126.61—an average of \$3.56 per member.

In the pork and crop production club work, twenty-five states organized 3,174 members into 8,800 clubs. The members managed 5,300 animals, producing 728,411.96 pounds of pork, worth \$85,762.04. It cost \$42,675.58 to produce this pork, leaving a net profit to the members of \$43,086.46.

Lewiston One-tenth Acre Garden Clubs. Each of the forty-six garden club members in the irrigated section at Lewiston, Idaho, took one-tenth acre plat with the definite aim of showing the possibilities of these uniform plats and of making money during the vacation at home. Some chose mixed-vegetable gardening and others chose the main crops of their parents, such as strawberries, apples, potatoes, head lettuce and cauliflower. Careful records were kept by each of all expenses and receipts as well as allowing wages for actual time engaged in their club work.

The forty-six members produced \$3,864.80 worth of fruits and vegetables at a total cost in time, labor and materials used of \$724.54, leaving a net profit of \$3,140.26, or the average gain per member of \$68.26. The greatest net gains made were by Harry Phillips who made clear \$207.40 on his tenth-acre of head lettuce and Charles Iseman, \$118.05 on his tenth-acre of early strawberries, while the lowest returns to any club members were \$23 and \$25 each for his plat of late strawberries, vegetables and apples. Thus each became a local demonstrator in the home and for the community of the best methods of production and marketing as well as a demonstrator of business records in connection with the work.

On June 30, 1917, there were 948 paid leaders working in connection with the boys' and girls' club work, and 9,748 voluntary club leaders. Of the paid leaders, 240 were paid coöperatively by the state and the United States Department of Agriculture, 133 by the state college and the local people, 18 by college people only and 733 by the local people, as outlined and planned by the state coöperative leaders in charge.

During the past winter from December 1, 1916 to April 1, 1917, 3,589 club members attended the one or two weeks' short courses at the state colleges of agriculture. One thousand five hundred and twenty-eight of these were champions of their respective counties in the boys' and girls' food work and were sent by the local people free of expense to attend the college short courses.

The boys' and girls' club work during the present year has not only increased its membership and number of clubs but has also increased its organization for the proper supervision and direction of the work. Eighteen different agricultural and home economics projects are being promoted in the northern, central and western states with a total enrollment of regularly organized club members of 406,636. In addition to this we have about 400,000 boys and girls in the war emergency projects growing gardens, canning food products, raising poultry, making war bread and doing other things of a special nature and character and supervised by our state coöperative leaders. These are enrolled from the large cities and are not classified as regular farm and home club members. The regular members are now organized into the following clubs:

Corn clubs.....	945	Bread clubs.....	643
Potato clubs.....	1,217	Sewing clubs.....	1,250
Home garden.....	3,070	Handicraft clubs.....	76
Canning clubs.....	2,152	Sugar Beet clubs.....	161
Garden and canning.....	776	Home cooking clubs.....	755
Mother-daughter.....	270	Other miscellaneous clubs...	448
Poultry clubs.....	832		
Pig clubs.....	1,037	Total club groups	13,790
Baby beef clubs.....	158		

These clubs are all definitely organized, have the services of our leaders, hold regular meetings, have their own officers and use the project activities as a basis of their work.

What we mean by "club work" is simply this: the organization of boys and girls and working them together in groups on a year's definite program, with a volunteer or a paid club leader supervising each group closely, furnishing the follow-up instructions, making personal visits and making them feel that they are really helping to do a piece of the world's work rather than just giving them hard work as medicine for their own good.

When war was declared the United States Department of Agriculture in coöperation with the agricultural colleges had county agricultural agents, woman demonstration agents, and leaders of boys' and girls' club work on the job in over half of the counties in the union. Today there are leaders in one of three extension lines in nearly every county in the United States and in some of them there are two, three or even more. The state colleges of agriculture

and the experiment stations, assisted by the Department of Agriculture in a coöperative way, have been preparing for a big food program for some five or six years, and during this time boys and girls have been getting into the game and learning how to increase the production of food products and at this time help meet our war needs.

There are five community canning kitchens near here, outgrowths of the children's work. Over here at Ardmore, Pa., there have been canned since June, five thousand jars of food products, now in storage; at Bryn Mawr, five thousand packs of food products, put up since June; at Rosemont, a thousand packs; at Wayne, a thousand; at Berwin, six thousand—over eighteen thousand packs in these five centers have been successfully canned by the one-period, cold-pack method of canning outlined in Farmers' Bulletin No. 839, with but a few jars of spoilage, a smaller percentage of spoilage than is found with the average commercial canning plant.

There are over forty community coöperative food centers of this type in the United States, all started since war was declared. At Southampton, Long Island, Lake Forest, Illinois, and at St. Louis, all are doing wonderful work. I have reports from these three now, and will hope to hear from others later.

The one at Lake Forest, Illinois well illustrates what we might have in every community. They have a community canning kitchen and will also do work on the drying of vegetables. They have under the canning kitchen a storage room for all their canned goods. It is managed and supported by the best business brains of Lake Forest; some of these high-powered business men from Chicago live up there and they have gone in and contributed freely of their brain, brawn and business experience. They have also a community root and tuber storage plant. These three conservation enterprises will serve them throughout the year. Lake Forest, Illinois gives us a notable example of what should be done in a coöperative way in other communities. The Lake Forest, Illinois canning kitchen now has in storage sixteen thousand quarts of one-period, cold-pack canned goods, and they are going to put up vegetables, jams and marmalades. They will also manufacture potato starch in such a way as to serve as a substitute for wheat flour.

In talking with a potato grower I learned that from 10 to 20

per cent of a potato crop is made up of culls, such as small, scabby, and broken tubers—all of them easily made up into potato starch for home use. The interesting thing is that you can take that 10 or 20 per cent of otherwise unprofitable potatoes and run them through a food grinder or chopper at home or in a community coöperative center, and by putting it through three or four washes you can bring out of it a pure white starch—a splendid exercise for the school to teach the children, a splendid thing for the home to start. This potato starch will become a splendid substitute for wheat. For those who know how to bake bread, 20 per cent of the flour now used in the bread, custards, pies, cakes and other dishes, may be made from potato starch taken from these cull potatoes which would otherwise be wasted.

In conclusion may I urge upon you all the necessity of increasing the interest in every community in our *junior food soldiers* and in the building of adequate food fortifications, above all help us patriotically in the development of the four-square world citizens, boys and girls, achievement crowned, because of opportunities given them by a thoughtful and efficient leadership.

THE WORK CONDUCTED BY THE COMMERCIAL CANNERS OF THE COUNTRY

By W. D. BIGELOW,

Chief Chemist, National Canners' Association.

The preservation of food by sterilization in hermetically sealed containers was suggested over a hundred years ago. For forty years the process was chiefly confined to the home, and it was only in the middle of the last century that commercial canning passed the experimental stage. Its history as an industry, therefore, dates back only about sixty-five years.

The canning industry is one of the great movements in connection with the manufacture of food which has necessarily accompanied the changing economic conditions of the century. From a household method used mainly to preserve what was left over of raw products grown for other purposes, there has been developed an industry using raw products grown especially for can-

ning. Canning factories, at first located in cities, are now usually found in the country or in small towns surrounded by a farming community in which the particular products they are designed to pack can be grown to best advantage. Much progress has been made in the direction of preparing products of uniform character to suit a particular trade.

During the early days of the industry the methods employed were held as secrets and carefully guarded, even from the employes of the plant. As the industry developed, it gradually became evident that canners were all guarding substantially the same information, so that the policy of secrecy in technical operations was of little, if any, value. It not only afforded little protection against competition, but it prevented the possibility of conference which might often be helpful.

Gradually, therefore, the policy of trade secrets was replaced by one of conference and collaboration in technical matters. Finally it became apparent that more progress could be made by systematic study and that laboratory methods would be of advantage. Accordingly, in 1913, a laboratory was established for the purpose of investigating canning processes in order that the difficulties of manufacture might be eliminated, costs of manufacture reduced, amount of spoilage decreased and products improved.

This laboratory has had the close coöperation and active support of the industry and has already completed several investigations which are believed to be helpful. Its most ambitious work has been a collaborative study with the laboratories of the American Can Company and the American Sheet and Tin Plate Company of the relative value of different weights of tin coating on canned food containers. This work was undertaken for the purpose of determining the minimum amount of tin coating which should be employed to keep the food from coming in contact with the steel of the can and thus imparting to the food an undesirable appearance and possibly an undesirable flavor. The idea then was to be sure that enough tin was used. The importance of conserving tin by preventing the use of an excessive amount was regarded as secondary. Since that time, our need of tin has increased to such an extent as to sorely tax the world's supply and it becomes of the utmost importance that the weight of coating be not excessive.

In addition to research problems studied by the laboratory,

samples are received daily from members of the National Canners' Association illustrating the difficulties they are having and asking for help in overcoming them. The experience of the laboratory makes it possible to answer many of these questions and thus eliminate great loss from spoilage that would otherwise occur.

One of the difficulties with which the canning industry has had to contend is a prejudice against canned foods due to lack of information on the subject. This prejudice takes various forms. The majority of consumers give little attention to defining the grade and quality of canned foods they prefer. In making a purchase, they merely ask for a can of peas or a can of corn. As they do not know what to ask for, they are inclined to take the cheapest. The result is that they are likely to receive an article which is over-mature and for that reason of low commercial grade and cheap. The product is wholesome. Its nutritive value is probably as high and, with some articles, is likely to be higher than that of the highest commercial grade of the same article, which sells for twice the price. It is likely, however, to be less succulent and tender than if the product had been harvested a day or two earlier.

The canning industry recognizes the need of some fundamental change that will assist consumers in buying canned foods of the character and quality they prefer. The subject presents great difficulties. There is no uniformity in labeling. There are commercial grades which have a meaning in the trade, but often the labels give no indication by which the consumer can know the character of the product. Many foods are difficult to describe in terms that can be understood by one who has not given the matter special study.

A movement has been inaugurated by the National Canners' Association to correct this difficulty. Standards have already been adopted for canned peas which, when placed on the label, will give the consumer exact information regarding the quality of the product. It is not expected that these standards will take the place of trade names, but that they will be used in addition to whatever other designation is desired. Some packers have begun to use these grades on their labels. Others are ready to do so when the trade demands it. How soon they will come into general use depends on the consumer.

It may not be possible in other lines of food to adopt as exact

definitions as those that have been adopted for peas, but great advance can be made over the present labels and the question is being actively studied. If the consumer will do his part, the label can soon be made "the window of the can"

The subject of food poisoning—or ptomaine poisoning as it is popularly called—is only partly and vaguely understood. It is known that illness of this type is often due to microorganisms with which the food is contaminated and the identity of some of these organisms has been established.

A comprehensive survey of the subject has not been made, however, and food poisoning may sometimes be due to varieties of microorganisms or other factors whose agency has not yet been suspected. Our lack of information on this subject is probably owing largely to its complexity and to the difficulties involved in its study. For instance, in the case of those microorganisms known to produce food poisoning, the period of incubation has not been accurately determined, but is believed to vary from a number of hours to several days—perhaps as much as a week. When a case of food poisoning occurs, therefore, the food that caused it is rarely available for study. Because of the state of our information on this subject, many cases of illness, arising from entirely different causes, have been attributed to food poisoning.

The need of a comprehensive investigation of the subject has long been recognized. For some time such a study has been contemplated by the canning industry, but its adequate organization involved great difficulties. Finally, within the last year, the National Research Council consented to organize the investigation.

They designated as director Dr. M. J. Rosenau, Professor of Preventive Medicine and Hygiene of the Harvard Medical School, and appointed an advisory commission consisting of the following well-known men:

- Dr. J. J. Abel, Professor of Pharmacology, Johns Hopkins University
- Dr. Reid Hunt, Professor of Pharmacology, Harvard University
- Dr. E. O. Jordan, Professor of Bacteriology, University of Chicago
- Dr. Lafayette B. Mendel, Professor of Chemistry, Sheffield Scientific School,
Yale University
- Dr. F. G. Novy, Professor of Bacteriology, University of Michigan
- Dr. H. G. Wells, Professor of Pathology, University of Chicago
- Dr. Eugene L. Opie, Professor of Pathology, Washington University

The actual laboratory work was begun several months ago and is being actively carried on by a corps of trained workers at the Harvard Medical School. The National Canners' Association has donated to Harvard University a fund sufficient to finance the investigation for three years.

When the United States was drawn into the European War, it became evident at once that the demand for canned foods must far exceed the supply. Even before that time, the amount of some products was insufficient. It was obvious that the purchase of such supplies by the old process of competitive bidding would lead to interminable delay and would not secure satisfactory results. It was obvious also that orders must be given for the army and navy which would be larger than any one agency could supply. In such cases bidders must secure the refusal of the goods desired and base their bids on such refusals. Thus many inquiries would be made for the purpose of filling a single order. In this state of affairs the real demand could not be gauged and prices would be inflated in our general market as well as for the supplies of the army and navy.

The first inquiries of this nature were for evaporated milk. The manufacturers had been unable to fill their orders for some time and did not desire to bid. There resulted a consultation within the industry in which it was arranged that the needs of the government for this product should be supplied for materially less than the market price. The orders were apportioned among the various manufacturers in proportion to the amount packed by each, and the quality of each shipment was guaranteed. Instead of the delay that has heretofore attended such purchases, these orders are given priority over all others and the milk is shipped at once. This plan was found so satisfactory that the manufacturers were asked to supply milk on the same basis to the American Red Cross and the Committee for Relief in Belgium. As preparations for the war progressed, a general procedure, based on this same arrangement, was adopted for the purchase of the principal staples.

Under this plan packers are instructed by the Council of National Defense to withhold from sale a certain percentage of their pack of each of the canned products which the government desires to purchase. For instance, the packers of peas were asked to hold 12 per cent of their entire pack; packers of tomatoes 18 per cent;

and packers of string beans 25 per cent. These goods are then ordered as they are desired by the army and navy.

Special arrangements are made by a committee of experts not connected with the canning industry to inspect these goods and see that they comply with specifications, the packers being required, at the suggestion of their own organization, to comply with the specifications fixed. On all of these purchases the prices are not the subject of agreement but are fixed by the Federal Trade Commission, which ascertains the cost of manufacture by means of a staff of expert accountants who visit the canning factories. These prices are well below the contract prices which govern the sale of the same commodities in the usual channels of trade.

During the present year 800,000 cases of evaporated milk, costing about \$4,000,000, are being used by the American Red Cross and the Committee for Relief in Belgium. The army and navy use at least as much. There is being exported for the use of our allies at least \$10,000,000 worth of milk per year.

The estimates of the army and navy for the present year include something like \$6,000,000 for tomatoes and \$2,000,000 each for salmon, peas and corn. The amount of money that will be expended for canned meat cannot now be estimated, but will probably be between \$15,000,000 and \$20,000,000.

The pack of 1916 was short in most articles. There are no stocks in the hands of packers or jobbers and the supply on retailers' shelves is low. It is apparent, therefore, that the volume of canned foods needed in connection with the war must curtail the supply of our civilian population.

The attempt of canners to secure largely increased acreage was only partly successful. Many farmers discontinued or reduced their acreage of canners' crops because of the high prices prevailing for corn and wheat. Others were deterred from large plantings of canners' crops by the scarcity of help, and planted crops for whose harvesting less labor was required. Late frosts killed the first plantings in some districts and new plants could not be obtained. The season is very late, and already frost has visited some localities. An early general frost would be disastrous to the pack of many products. The labor situation is one of extreme difficulty. The canning industry cannot compete with the high wages of the munitions manufacturers and has lost much of its best help for that reason.

Its ranks have been further depleted by the organization of the army. The actual canning operations are therefore conducted this year with unusual difficulty. Moreover, as often happens in late seasons, the height of the season is marked by a glut of some products that taxes the canning plants to their utmost capacity. Notwithstanding these handicaps, it is expected that between five and six billion cans of food will be packed in the United States this year.

The supply of tin is giving much concern. Early in the present year there was a great scarcity of tin plate, owing to the inability of platemakers to secure a supply of steel. It is probable that the amount of tin plate actually made into cans was no less than in preceding years, but the cans were used as soon as manufactured for baked beans and war rations for European armies. Consequently, when the canning season approached, it appeared that there might not be a sufficient number of cans to take care of the crop.

At the request of the Department of Agriculture and the Department of Commerce, a special effort was made to increase the manufacture of tin plate, and canners ceased to pack non-perishable goods, such as baked beans and macaroni, until a sufficient supply of plate was assured for the manufacture of cans necessary to preserve perishable foods.

Thus far there has been no scarcity of tin. It appears possible, however, that the supply of pig tin may not be adequate for the summer of 1918. Great difficulty attends its production in Singapore owing to the labor situation, and it is possible that the present output of that region cannot be increased. The same is true of other Oriental sources. There is ample tin in Bolivia which until very recently it has not been possible to refine. Lately, practical methods for refining Bolivian tin have been devised. One firm is now turning out from Bolivian ore a tin of the highest grade of purity at the rate of 600 tons a month, and it is hoped that this output can be increased. Notwithstanding this increase, however, it is feared that the supply of tin for 1918 will not be sufficient to meet our needs.

PRODUCTION AND MARKETING PLANS FOR NEXT YEAR

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Before proceeding to outline the production and marketing plans of the Department of Agriculture for the present time, as a large part of next year's production depends upon the present seeding of winter grains, and for the ensuing year, let us first examine briefly what the problem is and why it is so unusually necessary to make plans for the next year.

That bread is second only to bullets as an essential to win the war is not a theory but a cold fact. A relative scarcity of food supplies already exists, created in part by unfavorable conditions for crop production, and in part by the diversion of vast amounts of farm labor from the field of production into the pursuits of war. At least forty million men, a large number of whom come from agricultural pursuits, are now engaged in war or in war work. The year 1915 witnessed the production of prodigiously large crops of the important cereals in most of the producing countries of the world. The United States made 1,025,000,000 bushels of wheat, as compared with 891,000,000 bushels in 1914, and a five-year average of 728,000,000 bushels. Last year (1916) in contradistinction we produced only about 640,000,000 bushels, practically 400,000,000 bushels less than in 1915, and nearly 100,000,000 bushels less than the five-year average. In the face of this reduction in the crop our normal export requirements of about 125,000,000 bushels were more than doubled in order that we might feed the Allies and the neutral countries depending upon us.

In the case of corn also, 1916 witnessed the production of a crop fully 400,000,000 bushels less than the preceding bumper crop. Our white potato yield was nearly 100,000,000 bushels less than usual. A situation similar in kind but less in degree prevailed with respect to barley, rye and oats. In the case of some crops, notably rice, meats and other animal products, root vegetables and some

other vegetables and fruits, including sugar beets, and sweet potatoes, there was a somewhat larger production but wholly insufficient to fill the void occasioned by the reduction of nine bushels per inhabitant, or a total of about 900,000,000 bushels of the three great staple food crops,—wheat, corn and potatoes. Cabbages, and onions, important staples, were also present in a very short supply that resulted in extraordinarily high prices. Beans, which are especially important in war time, were normal in crop, but so abnormal a demand existed as to occasion a real shortage. As a result of the reduced production throughout the world and the enormous demand, reserve stocks have been depleted to an unusual extent. The outlook for the current season is fair and there need be no fear of famine so far as our own population is concerned. However, as we have associated ourselves with the Allies across the water in a grim determination to defeat the central empires in this war we cannot think in terms of our own needs only, but must have in mind in addition those of our allies and those of deserving neutrals dependent upon us. Recent exposures force the consideration seriously of very great extensions of the existing embargoes on foodstuffs and other materials. The normal total production of France, Italy, the United Kingdom and Belgium of wheat, corn, oats, barley and rye is 1,846,000,000 bushels. Their normal consumptive requirements are 2,214,000,000 bushels. Hence their import requirements exceed 728,000,000 bushels. In normal times Canada and the United States have contributed roughly 240,000,000 bushels of this need, each shipping about half of the quantity. Russia, North Africa, Australia, India and Argentina have furnished the rest.

In a general way the diet of the average person in the United States is obtained from the following sources:

- 39 per cent animal
- 31 per cent cereal
- 25 per cent fruits and vegetables
- 5 per cent sugar, condiments and miscellaneous

It is apparent from this that practically 70 per cent of the whole food requirements depends upon animal and grain food products. Therefore it is their production and conservation that is of the highest importance. On account of the inroads that war has made upon the herds and flocks of the world, it is estimated that there

has been a decrease of over 115,000,000 head of cattle, hogs and sheep. Although our own animal production has been increasing slightly during recent years after a long period of serious decline, it has not kept pace with our increasing population to say nothing of our export demand. The average exportation of American meats during the three years preceding the war was something over 493,000,000 pounds. During the war year, extending from July 1, 1915 to June 30, 1916, the total exportation was almost 1,400,000,000 pounds, or an increase of nearly a billion pounds over normal times.

In the case of the cereals, the existing crop situation in the allied countries, while fairly satisfactory, in view of the vast amounts of labor diverted to war, still leaves a large total requirement that must be supplied largely by North America. The long haul from Australia requires three times the tonnage that shipments from North America require and shipping is scarce. The great uncertainty of being able to move any considerable quantities from India make it unwise to depend too seriously upon that source. Transportation conditions in Russia are almost impossible even though there may be considerable wheat available. The last season's crop from the River Plate territory was small, and the outlook for the new harvest is not encouraging. Hence, added responsibilities for the United States and Canada.

In the case of wheat, the probable production of our great allies is about 961,000,000 bushels compared with their normal peace production of 1,486,000,000 bushels. The deficiency due to war promises to be about 525,000,000 bushels in Great Britain, France and Italy. The neutral nations dependent upon us need about 192,000,000 bushels. The normal consumptive requirement of the United States is about 575,000,000 bushels. The Bureau of Crop Estimates anticipates a crop of about 668,000,000 bushels. Hence our exportable surplus will be in the neighborhood of 90,000,000 bushels. On the basis of the existing crop prospects throughout the world, the United States, Canada, Argentine, Australia, North Africa and India will be able to supply about 500,000,000 bushels. This leaves between seventy-five and one hundred million bushels of shortage which must be obtained by conservation and better utilization. What this means in terms of bread will perhaps convey the shortage to your minds more adequately.

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It requires four and one-half bushels of wheat to make a barrel of flour. If the shortage were 75,000,000 bushels and it took five bushels to make a barrel of flour, the shortage would be 15,000,000 barrels. A barrel of flour under average conditions in modern bakeries produces 275 loaves of bread. Hence the shortage amounts to more than four billion loaves of bread. This probably is sufficient to feed every soul in the United States with his normal requirement of bread for two months. I have cited meats and cereals to indicate the amount and character of our needs.

In the case of two of our great food crops the prospect is for a large increase. In spite of the early frosts in the northern states we will probably have a corn crop of at least three billion bushels as compared with a five-year average of 2,700,000,000 bushels. The prospect for a potato crop is exceedingly fine, the estimates indicating about four and one-half million bushels. Last year's crop totaled only 285,000,000 bushels.

With this general introduction of the great problem to be met let us examine briefly the steps that are being taken in the United States to increase production and to improve distribution.

PRODUCTION PLANS

Cereals. The elaboration of a food production program raises many serious questions. When war was declared in April, seeding plans for the current season were far advanced and of course the winter wheat crop planted the previous fall was susceptible of no particular attention except through the possible application of nitrates for its quicker stimulation. Nevertheless, active steps were taken immediately to effect as large an increase as was possible. The Secretary of Agriculture called together at St. Louis on April 9 and 10, a most representative body of the agricultural interests of the nation. After thoroughgoing discussion of all of the problems involved, a careful report was drafted recommending the steps to be taken. The main features of the production program may be summarized briefly as follows:

1. Every community was to be urged to produce its own food and feed so far as practicable.
2. The production of non-perishable staples was to be increased beyond local needs in every locality where this could be done most profitably.
3. The staples recommended by the Department for immediately increased

plantings were spring wheat, rye, beans and rice. Sugar beet and sugar cane production were to be increased in districts lending themselves to those industries.

4. The commercial production of perishables was to be increased above normal only as the facilities of transportation and marketing were assured, while the home garden was encouraged, particularly with a view to supplying the need of the family growing it.

It was recognized that the farmer is a business man and that he could not produce crops at a loss. Therefore, only sound practices which involved no dislocation in the industry were recommended.

During the current summer more definite recommendations for the production of 1918 have been prepared, taking into account the existing conditions as to transportation, seed supply, fertilizers, farm machinery and available farm labor. The program worked out called for 44,634,000 acres of winter wheat. The authorities of the states most concerned, which are those properly equipped with machinery for producing and harvesting winter wheat, decided that it was possible to increase the acreage, and the plan finally adopted called for the sowing of over 47,000,000 acres of winter wheat, and over 5,000,000 acres of winter rye. On the basis of the average yield for the past ten years, this acreage should produce about 672,000,000 bushels.

As noted before, the prospect for the present year of both winter and spring wheat is only about 668,000,000 bushels. If we should have a bumper crop, this acreage would produce in the neighborhood of 850,000,000 bushels. On the whole, for the United States, the per cent of increase suggested is 18.

With regard to spring wheat, it is too early to determine what area should be sown next year. In 1917 there were 19,000,000 acres. If the yield is up to the average of the last ten years, there will be a crop of 251,000,000 bushels. If it equals the great crop of 1915, it may total 350,000,000 bushels. Should we attain a combined planting of 66,000,000 acres of spring and winter wheat, and have an average yield, we may expect over 1,000,000,000 bushels in 1918. With highly favorable conditions, it might reach a billion and a quarter.

Rye is recommended particularly for the soils and conditions in those states suited to its cultivation where wheat production is more precarious and rye can be planted more safely. It succeeds

on poorer soils with less fertilizer than wheat; likewise is somewhat less susceptible of winter killing. An acreage of 5,131,000 is recommended, which on the ten-year average yield will produce about 84,000,000 bushels. This acreage would represent a 22 per cent increase over last year.

The planting of winter oats in the south is recommended to the extent that suitable seed of adapted varieties is available. Recommendations have not been prepared covering next spring's planting of corn, spring oats, rice, the grain sorghums and buckwheat, but in due time and well in advance of the planting season, these recommendations will be available.

The bean acreage this year represents an increase of over 84 per cent over last year's. It is still too early to say definitely what should be done regarding this crop, as well as soy beans, cowpeas and peanuts. The increase in the acreage of the peanut crop in the last year is 60 per cent.

The production of hay and forage crops is to be increased to such an extent as may be practicable, to equal at least the plantings of the present season. Fortunately the high prices of livestock will tend to discourage plowing up pastures to grow grain crops, thus to an extent enlarging our possibility of supplying ourselves and our allies with sufficient livestock and meat products.

The demand for fertilizer is very large and the demand for basic chemicals, particularly sulphuric acid, in other industries, including munitions, has resulted in high prices and low stocks. In addition, there is some suspicion of hoarding, particularly of sulphur which might be used to increase our fertilizer supply. An investigation of this subject is to be undertaken immediately.

Carefully worked out plans are being put into operation in the areas where suitable seed stocks exist, to insure their use for increased production. In coöperation with the Food Administration all requests for the storage of grain for seed purposes will be passed upon with a view to effecting the saving of the highest qualities.

Livestock. The Department, with the coöperation of the Food Administration, agricultural colleges, livestock associations and producers, is taking many steps to extend the production of cattle, hogs, and sheep. With respect to beef cattle, the following lines of work are being actively prosecuted: increased feed production work, direct distribution of range cattle to feeding areas, the re-

distribution of livestock from drouth-stricken areas to areas of more plentiful feed, a concentrated drive against the cattle tick, the most efficient management of federal grazing lands, the greater encouragement of boys' beef clubs, and the appointment of a very large number of additional agricultural agents who will assist in the extension of the cattle industry through educational and demonstrational work.

Inefficient dairy cows at existing beef prices have proven more valuable for meat than for milk production with the result that unprofitable cows have gone to the block and a concomitant decrease has taken place in the total production of milk in proportion to the population. While milk prices are high, they have not risen in proportion to other products. Increase in the supply of milk and milk products must be secured by a better understanding of scientific methods of feeding and the selection of cows of greater production. This is being fostered by the Department through increasing the number of cow testing associations. Much ill-advised talk is going the rounds of the press calling for the prevention of marketing dairy calves. We can not feed the same milk to both babies and calves; neither can we use our available feeds for growing inefficient dairy calves into low value beef animals and have the requisite amount of feed left to produce the needed flow of milk. A certain way to decrease production would be to prohibit the slaughter of dairy calves. The Department disapproves of steps in this direction.

There is a world shortage of wool and mutton. To overcome this, all agricultural agencies are working in the direction of more thorough education in sheep raising and wool growing along safe and conservative lines. The redistribution of ewes no longer able to endure the hardships of the range to small farms is suggested. Steps will be taken to further overcome the injury and loss due to predatory animals. The saving for breeding purposes of every ewe lamb that promises to have an economic future is also urged.

Hog production is to be increased by every available means, including the greater control of hog cholera and other hog diseases and general educational and demonstrational work in the direction of more efficient production of pork and pork products. In connection with hog production we are urging particularly upon farmers the raising of all meat required for home use and the utilization of pas-

ture and forage crops to a maximum extent in order to reduce the grain ration required for making pork.

Perishables. It is too soon to make definite recommendations regarding acreages of truck crops to be planted for harvest in 1918. It is certain that we should have more frequent and more detailed estimates of crop prospects and crops, particularly of the highly perishable fruits and vegetables. The home garden, as was urged this year, should be encouraged to the extent of supplying as fully as possible the needs of the family growing it and any certain market outlet that may be available. The market gardener should be encouraged to plant to meet seasonal demands of the market he customarily supplies. The trucking industry should be encouraged to plant such acreages as will meet the normal demands of the markets as fixed by production in competing territories. Expansion of commercial production should be undertaken only after very thorough investigation in such territories as have not been thoroughly tested. So far as possible truck crops should be produced at the shortest feasible distance from the point of consumption in order to lessen the exactions upon our transportation facilities.

THE NATIONAL GOVERNMENT IN ITS RELATION TO MARKETING CROPS DURING THE WAR

Increased attention must be given to the marketing of food products in the present crisis because, in response to appeals from every side, production will be increased immensely during the present season. Sections which never before produced commercial surpluses will do so this year and the producers, being inexperienced in marketing, will not know how to dispose of their commodities without assistance. They will be confronted with a situation somewhat similar to that which faced some of the farmers in the Southern States when, after the ravages of the boll weevil had made it inadvisable to continue to plant cotton, the producers began to raise other crops and produced grain in commercial quantities. The proper distribution of this season's bean crop in such a way as to secure equitable returns for the producers promises to be an important problem, and potatoes have been planted so heavily that many sections will show a commercial surplus for the first time. The growers of these commodities will be largely dependent upon the Department for disinterested and accurate information.

The economical disposition of the products of home gardens—the number of which has increased tremendously—has presented many difficulties. At present it is impossible to measure the effect which the harvesting of these commodities will produce. Some of the truck growers surrounding certain large cities have not been able to dispose of their crops because their former customers have been turned into producers. They can only hope to sell their products in other cities which have not engaged so extensively in gardening and the problem has been to stimulate consumption and to bring the growers promptly into touch with communities which are able to absorb their products.

The particular marketing plans with which the Bureau of Markets will be charged are outlined below:

MARKET NEWS SERVICES

One of the things pressing most strongly for attention in the present crisis is the question of proper and equitable apportionment of supplies between markets to avoid the manifest wastefulness of having some markets undersupplied and some oversupplied with food and of allowing food to decay because it cannot be sold in the market to which it has been sent. This question the Bureau of Markets proposes to meet by extending its market news services on fruits and vegetables and livestock and meats, and to render a service similar in nature upon butter, eggs, poultry, grains, seeds and hay. These services will not only promote a more equitable distribution of the food of the nation, but will assist the producer in obtaining a better market for his products.

Fruits and Vegetables. A field force has been organized to cover in turn the most important producing areas of various fruit and truck crops immediately preceding and during the shipping seasons. Some of the crops covered by the news service last year were tomatoes, cantaloupes, peaches, watermelons, onions, asparagus, strawberries, potatoes, grapes and apples. Temporary and permanent branch offices have been established in the most important markets and consuming centers and daily telegraphic reports are obtained from the common carriers showing the number of cars of each crop shipped from producing areas on their lines and the destinations to which such produce will go. These reports, together with the number of cars offered and the prices prevailing

on each of the principal markets, are summarized for redistribution to producing districts, markets and the press.

Under the emergency appropriation the number of permanent stations will be increased from twelve to twenty-five and the list of products reported on will be enlarged so as to include all of the more important fruits and vegetables and such staples as dried beans and peas. The service will be country wide, stations being opened on the Pacific Coast and in the South.

Livestock and Meats. A market reporting service on meat trade conditions in the eastern consuming cities was instituted in December, 1916, and the information is published daily in bulletin form in such important markets as Boston, New York, Philadelphia, Chicago, Omaha, Kansas City and Washington. Daily telegraphic reports are received from division superintendents of railroads showing the number of cars of each class of livestock loaded during the preceding twenty-four hours and the destinations of these cars. This information is compiled daily and wired to the principal central markets.

Under the emergency appropriation the eight stations now covered will be increased to twenty and the organizations in Chicago and New York will be built up to a point commensurate with the importance of those markets. This work should be particularly valuable in the present emergency not only in equalizing the distribution of livestock and meats, but because, tending to inspire confidence in the mind of the producer and relieve him of the fear of manipulation, it will increase production. The livestock business has been so hazardous that stockmen have been leaving it for other and safer undertakings.

Butter, Cheese, Eggs and Poultry. The news service on dairy and poultry products will include the securing and issuing of reports of production, market receipts, market conditions, and market prices of these products. Branch offices will be established on the Pacific Coast, in the Middle West, in the South, and in the East. This work, however, is yet in an experimental stage. This service is greatly needed as the storage of these products is based largely on guess work and inadequate information and trading in these products involves much speculation. An information service on these products should improve market conditions, stabilize prices and facilitate trading. The need of this market information is greatly

increased by the fact that the butter and egg exchanges are scarcely performing their normal functions.

Grain, Seeds and Hay. A market reporting service is now being established for grain, hay and seed. Under this service bi-weekly reports are being issued giving estimates of stocks on hand, shipments, requirements of markets in the immediate future, and the prices at which these commodities are being bought and sold in various sections of the country.

For this purpose the country has been divided into ten districts, the first district to be organized including Virginia, West Virginia, North and South Carolina, Maryland and Delaware. Reports will be issued at present on wheat, corn, oats, and hay. Other commodities will be added and additional territory included as rapidly as possible.

Working in coöperation with the Bureau of Plant Industry, seed stocks of suitable quality are being located in order to see that all communities are adequately supplied with properly acclimatized seed for planting.

FOOD SUPPLY

In order to have authoritative information as to the country's food supply the Department of Agriculture, through this Bureau, is taking stock of our food supply with a view to secure information regarding the existing quantity of food products and its location and ownership. In this crisis accurate information should be at hand regarding the instrumentalities and agencies that own, control, manufacture, and distribute food products. For this purpose schedules have been mailed to 385,000 food handling enterprises from whom certified reports are being obtained showing the amount of eighteen important food articles held by each. As an indication of their character and number, I will cite some of the more important groups:

Grain elevators, mills, and wholesale dealers.....	38,000
Grain, flour and feed dealers and proprietary feed manufacturers.....	18,000
Breweries.....	1,200
Distilleries.....	800
Rice mills and storages.....	800
Canners of fruits, vegetables, meats and sea foods.....	6,500
Mills, refineries and exclusive dealers of edible oils.....	1,400
Sugar and sirup mills and refineries.....	1,300
Wholesale and retail bakers.....	32,000

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Manufacturing and wholesale confectioners.....	1,800
Fish freezing plants, and dry and salt fish packers.....	1,040
Slaughterers and meat packers.....	3,700
Lard compound and oleomargarine manufacturers.....	169
Wholesale poultry, butter, egg and cheese dealers.....	5,000
Poultry packing and fattening plants, and live poultry shippers.....	5,000
Wholesale fruit and vegetable dealers.....	1,500
Wholesale grocers and merchandise brokers with stocks.....	7,500
Creameries and milk condenseries (condenseries 393).....	7,000
Cheese factories.....	5,000

After this information is obtained reports will be secured monthly from all places storing agricultural products in order to keep an account of the food supply so that at any time it will be possible to tell just how much food the country has on hand and its exact whereabouts. After the harvests are all in, about December first, a more comprehensive and detailed survey will be made.

CONSERVATION OF FOOD PRODUCTS IN TRANSPORTATION AND STORAGE

Through its investigational work extending over a number of years, the Department has been able to a great extent to determine the most efficient manner of handling perishable food products intended for transportation and storage. Information will be distributed calculated to promote the extension and to insure the effective application of the fundamental principles governing such matters. Sources of waste must be pointed out, such as those caused by delays in shipment, delays in transit and at terminals, and improper methods of storing in cars. Efficient and inefficient types of containers will be demonstrated and producers and others shown the amount of losses resulting from unnecessarily long hauls, too long storage, or storage in buildings not well adapted for that purpose.

CITY MARKET SERVICE

As mentioned in the first part of this article the home gardening movement probably will cause some losses to truck gardeners having farms adjacent to cities, upon the inhabitants of which they depend for their market. In some cities the plan worked out by this Bureau in coöperation with the market gardeners' association at Providence, Rhode Island, probably will be used.

An agent visits the market early in the morning to ascertain the amount and kind of produce on the farmers' wagons. He determines also as accurately as possible the probable supply which will be brought to the market by the growers on the next day and this information will be tabulated and posted. If it should appear that more fruits and vegetables will be brought to the market than the market can absorb, means are taken to find other points having need of such products. Municipalities are being assisted in improving their methods of handling and distributing foods and wherever necessary an effort will be made to install municipal drying plants to take care of home-grown fruits and vegetables which cannot be consumed when fresh.

DIRECT MARKETING ACTIVITIES

This work will be conducted in coöperation with the Post Office Department and express companies in order to assist in the direct interchange of products between nearby producers and consumers.

Prevailing high prices create for direct marketing a much wider field of usefulness than it would possess under normal conditions, as it is now economically possible to market commodities by parcel post or express which heretofore could not have been disposed of in this way because the relatively high cost of packing and shipping rendered this impracticable.

Assistance will be given so far as feasible in establishing personal contacts between producers and consumers in order to assist in marketing the surplus products of home gardens and the excess produced by truck growers and others, and many small quantities of food will thus be sold that otherwise could not be marketed. This will add to the available food supply of the nation. Agents will be placed in a number of large cities throughout the country to awaken interest in direct marketing among consumers. Agents also will work through the postmasters in small towns in interesting producers in furnishing supplies.

In view of the car shortage, and congestion at terminals, and the great difficulty that is experienced in handling efficiently less than carlot quantities of freight, demonstrations will be undertaken in the establishment of automobile truck marketing routes.

INSPECTION SERVICE

Under an amendment inserted in the food survey bill on the floor of the Senate an inspection service will be conducted enabling the Secretary of Agriculture to investigate and certify to shippers the condition of fruits and vegetables and other products arriving on the market. Producers, dealers and transportation companies have been clamoring for an inspection service for many years. It should afford protection to producers against unjustified rejections of produce and against false and misleading reports concerning the condition of produce consigned for sale on commission. This service should stimulate the production of perishable products by assuring the grower fair treatment in the market and educating him to better methods of packing and handling, and the consumer would be benefited by the increased production thus brought about. Certificates from federal inspectors would furnish a basis for adjusting claims for damages to perishable products in transit and should have an important educational value in tending to keep the grower informed as to market requirements and teach him to grade and pack his product in accordance with those requirements.

STANDARDIZATION

The standardization of agricultural products and the packages and containers in which they are offered for sale is fundamental not only to the efficient marketing of agricultural and other products, but is absolutely necessary in the present crisis because it will furnish an accurate basis for price quotations and should obviate many of the delays and misunderstandings which inevitably arise on account of a lack of complete understanding between buyers and sellers and which will interfere materially with the intelligent distribution of food to our own people and to our allies.

Standards definitely determined upon furnish buyer and seller with a common terminology so that the latter knows just what the former will deliver to him when he contracts for a commodity of a specified grade. Standardization of agricultural products furnishes an adequate basis for the efficient dissemination of market information. When the experimental market news service was put into effect by the Office of Markets and Rural Organization about two years ago the necessity was quickly realized for a common language in quoting prices and for the accurate description of prod-

ucts, packages, and containers. Standards already have been fixed for shelled corn and wheat under the United States grain standards act, and for white and colored cottons under the United States cotton futures act. Under the standard basket act mandatory standards have been fixed for Climax baskets for grapes and other fruits and vegetables, and baskets and other containers for small fruits, berries and vegetables. Tentative grades have been worked out for Arkansas sweet potatoes, Irish potatoes, apples, and other commodities.

MARKETING PLANS

Licensing and Supervision. When Congress asked the Department of Agriculture to draft suitable legislation to provide for the national security and defense by encouraging the production, conserving the supply, and controlling the distribution of food products, this Bureau assisted largely in the drafting of the legislation. One section of the food control bill empowers the President, through such instruments as he may select or create, to license the agencies of distribution. This task has been assigned to the Food Administration under Mr. Hoover. This is a matter in which I have taken a great personal interest for a number of years. To my mind the enactment of Section 5, the licensing section, creates one of the most important opportunities for service to American agriculture that has been offered in many years. Already the grain elevators and the mills grinding over one hundred barrels of flour per day have been placed under license by the Food Administration. The licensing of other agencies of distribution is at present under consideration. Because of their peculiar nature the produce, vegetable and fruit trades are subject to certain evils which restrict the free distribution of foodstuffs and thus discourage producers. These can readily be overcome by a system of federal licensing and supervision for which there now exists authority of law. The best members of the fruit and vegetable trade, as well as many of the butter, poultry and egg trade, have long been in favor of such a licensing system and many of them have openly advocated it.

Licensing in itself will accomplish nothing unless it is combined with a certain amount of supervision. This supervision would necessitate the establishment of standard systems of accounting and of standard business practices, with a certain amount of regular

inspection, to see that licensed merchants carried out their business in accordance with these standards.

By means of the standard systems of accounting and standard business practices which all licensees should be required to install and maintain, the following results would be accomplished:

1. "Fly by night" concerns, which are now all too common in the produce business, would be eliminated. These are concerns which establish themselves in business at various points, and solicit consignments by means of attractive advertising. After a short period they may disappear entirely, leaving no money behind and owing much to various shippers. The legitimate trade earnestly desires to see these concerns eliminated. It is only because of the peculiar nature of the fruit and produce business that they are able to exist at all.

2. By means of the standard system of accounting which licensees should be required to install, and by means of occasional inspection of books by government representatives, the making of dishonest returns will be reduced to a minimum. The making of dishonest returns is a practice which is steadily decreasing, but it is still all too prevalent.

3. By means of regulations enforced under a license, prompt returns to shippers could be enforced. A certain element of the trade customarily delays returns beyond a reasonable length of time.

4. Another evil which could be eliminated would be the averaging of returns to all shippers. Many houses that are otherwise reliable do not keep accurate records and at the end of the day's business average all sales of any commodity, such as strawberries for instance, and return to shippers the same price regardless of the quality of their berries or the price obtained for each shipper's particular lot.

5. Regulation of licensees would prevent the making of charges for hauling, packing and other services which are not actually performed. Many firms supposed to be reputable make a practice of adding extra charges for services which are not performed, and on certain markets many firms actually depend upon their hauling charges for their profits, charging an exorbitant rate per package. The practice of making a hauling charge has become so common in some markets that practically all shipments have this charge made against them, whether the service was actually performed or not.

6. By a system of licensing the practice of charging varying rates of commission to different shippers would be eliminated. Some otherwise reputable firms make a practice of charging "all the traffic will bear." Commission men are actually performing a public service, and should treat all shippers alike.

7. By means of standard systems of accounting and business practices prescribed for licensees, the practice of making rebates would be eliminated. Many otherwise reputable firms consistently rebate 3 per cent of gross sales to association managers who ship carloads of goods to them for sale for the account of their association. This is little less than bribery and the expense involved must ultimately come out of the pockets of the growers and consumers.

8. The practice of "buying in" for the account of the receiver large quantities of goods received on commission, and afterwards selling them at much higher prices, would be eliminated. Certain firms who are large receivers of consigned goods often purchase them outright when the market is low, and hold them for a short time, selling them for much higher prices. No one should be allowed to purchase a producer's goods at the same time that he is acting as agent for the producer.

9. Commission charges are usually made for services rendered in selling consigned goods on a jobbing basis. Through custom it has become almost the general practice to sell all goods at a jobbing price, and when small lots are sold at a somewhat higher price many firms pocket the difference between the jobbing and the so-called retail price. Regulation of licensees would eliminate this.

10. It is almost the universal practice of firms receiving goods on commission to "buy-in" any few packages left over from full carloads of consigned goods which may not have been sold at the end of the day's business, in order to make prompt returns. As a rule these goods are resold at the same price for which they are bought in, but sometimes a good profit is obtained on these leftovers. Standard practices prescribed for licensees would prevent this.

11. Many auction companies now acting as agents for shippers are owned by members of the trade. All auction companies make a terminal charge of a few cents per package, which charge is paid by the purchaser. Some are alleged to give special privileges in the matter of terminal charge rebates to their own stockholders. As the auction companies are essentially public service corporations, they should treat all patrons alike. These practices could be eliminated through the licensing of auction companies.

12. The practice of making rejections of carloads of goods purchased subject to inspection because of a declining market and upon technical grounds is very common. Licensed merchants could be controlled in this respect and unfair rejections by them be avoided.

13. Any steps to be taken in actual food control will necessarily utilize existing machinery. A license system will form the basis of work to be carried out in this connection, and contacts with the trade will be established and accurate lists will be ready, if there is need for them.

A correctly conceived and properly executed licensing of the agencies of distribution will relieve the honest majority of the trade of the evil practices of the minority. It will furnish a disinterested agency through which they can in the future expect to be relieved of much odium and unfair criticism that has been leveled at merchants engaged in the distribution of perishable food products. Taken together with the inspection of foods described above we may fairly look to a new era in perishable distribution.

AN AGRICULTURAL POLICY FOR THE UNITED STATES IN WAR TIME

BY GIFFORD PINCHOT,

President of the Pennsylvania Rural Progress Association.

One of the outstanding facts which is least recognized among the great facts that this war is gradually forcing upon the attention of the world—perhaps the outstanding fact of all—is that the world will never be the same again; in fact the change has already been made. We have passed already into a new world order which has laid the foundations of a new point of view not only in world affairs but in national and civic affairs as well.

I do not mean by a "new point of view," a view that has never been advocated before, but a view that has never before been widely adopted; and that view, if a conservationist may say so, is the point of view of the conservation policy. It is the point of view of planned and orderly development to reach distant ends.

Hitherto, in all our national affairs, we have gone where the pressure was least. I do not say that as a criticism; I state it as a fact. It is necessarily so in the early stages of any civilization. We have yielded to the thrust that sent us this way or that way without accepted plan or definite conception of where we were going, and this has led us, as it necessarily has led every other nation in a similar stage of development, to haphazard excursions in this direction and in that. The condition which we have now reached, not only in agriculture but in every phase of our national life, is a result far more of the action of forces which we did not count upon

in advance than it is of any planned and definite effort to reach any definite condition by following any definite line.

Is it desirable to reverse this national habit of mind? The answer is that perhaps this is an academic question, for we have been forced into a set of circumstances which compel us to adopt a new point of view. We have reached a situation in which the indispensable basis of national survival is a higher degree of national efficiency than we have yet sought and a more conscious pursuit of distant aims than has ever been characteristic of the American people. We are thrown into a world order molded upon a plane of efficiency such as we in the United States, efficient as we have been in many respects, have, in my judgment, never conceived to be possible.

We shall find ourselves, after the war, forced into competition for commercial survival with nations, driven by the pressure of debts unimagined before into an absolute necessity for conquering foreign trades as the first means, after food, of self-preservation. In order to hold our position we shall be compelled, in my judgment, to reorganize our national point of view and plan where we mean to go, instead of allowing ourselves to drift where it is easiest to go, as we have done about so many things in so many directions.

If that is true, have we reached a stage where the adoption of a definite agricultural policy for the United States is demanded? Is such a policy possible? It seems to me to be inevitable in view of the known facts of the world's situation.

The essential consideration, as I see it, is the change in the direction of agriculture in the nations that are at war, because of facts brought about by the war. What I mean is this:

The world is short of livestock. Mr. Hoover's figures give us a world deficiency of 28,000,000 cattle, 32,000,000 hogs and 54,000,000 sheep; or a total shortage of livestock in the world of about 115,000,000 head. The submarine warfare means that we can no longer supply to the nations of Europe the additional feeds required in the past to keep their supply of domestic animals up to its normal point.

For example, an embargo has just been placed on cotton-seed cake, of which we have been shipping abroad a million tons a year. That means a reduction in cattle abroad. We can no longer ship corn as we used to do. That fact is reflected in the English govern-

ment's decision to reduce English cattle on a very considerable scale.

The French supply of livestock is short already. Since the beginning of the war, it has fallen below the pre-war average 16 per cent in cattle, 33 per cent in sheep, and 38 per cent in hogs; and similar figures might be adduced for other countries.

The first fact then, as I see it, is the large shortage, and the necessity for an increase, in livestock abroad.

The second fact is that after the war, European farmers will be forced in the direction of grain production. They will have less stock to eat their feed; therefore they will grow less feed. They will have a larger demand for grain for human food; therefore they will grow more grain. In other words, the agricultural policy of the European nations, from the very nature of the situation, will be driven in the direction of grain rather than livestock.

What then ought we to do both in relation to what they are going to do and to our own situation here?

Our first great contribution to the war is food, and of food, wheat first of all. We shall doubtless produce next year a crop of wheat so large that it may reach even a billion bushels. In other words, our own coming increase in wheat, coupled with the certainty of larger European production of wheat after the war, fairly removes the wheat question from the debatable field.

But not livestock. What is our own situation in livestock? The first great fact is—and it is true also of grains—that our per capita production has dropped. There has been within the last year or two, however, no decrease—indeed, a slight increase—in absolute numbers. For example, we have 102 per cent this year of the cattle that we had last year, and 103 per cent of dairy cows. There has been a slight decrease, amounting to only 300,000, in the number of hogs.

In addition, then, to considerations arising from the European nations, we find ourselves faced in this country with a situation which leads to the belief that we shall have a very alarming shortage of livestock in the near future.

Take, for example, the question of hogs. In Iowa, the greatest hog producing state, estimates show there are 20 per cent less hogs now than there were a year ago; in Missouri, 18 per cent less, in the United States, as a whole, about 7,000,000 fewer hogs than a year ago.

Why? Because of a doubt on the part of the farmer that it will pay to raise hogs. The high price of grain, coupled with the uncertainties of the market, has persuaded the farmers of a large part of this country that it is not worth their while to raise more pigs. The result appears in an immediate decrease, which will be reflected in a shortage in supply later on, just when the war demands a very large increase.

The question is not merely one of keeping our normal amount of livestock or producing our normal amount of meat and especially of pork products. It is a question of very largely increasing that supply, just exactly as it was in the matter of wheat, because it is necessary in order to win the war. Without it we handicap our allies and we endanger the winning of the war. Yet as things stand today we face the probability not merely of no increase in pork products, but in the face a tremendously enhanced demand, we face an actual decrease.

Take now the matter of beef cattle in the west. Last winter was a very hard one. The losses were very large. In Texas the drought of this summer has resulted in sending prematurely to market large numbers of cattle and in the death of very many others; and such examples might be multiplied. So in beef cattle also, we find ourselves threatened with a decrease, both because of bad seasons and because of the farmers' doubts. Will it be worth while, for example, for the man in Nebraska to buy "feeders" from the west, feed them on corn and ship them to the Chicago market as fat stock? There is doubt whether that operation will pay, and that doubt is reflected now in the difference on the Chicago market between the price of finished cattle and the price of feeders and stockers, because the demand for the latter is abnormally small for this time of year.

Again, take the matter of dairy cattle. We have some 22,000,000 dairy cattle in this country. Nearly a fifth of the dairy herds, on the average all through the country, go to the slaughter every year. The exact figure in New York State seems to be 17 per cent. In New York it was found that between April first of this year and April first of last year, the number of dairy cattle going to the slaughter, in addition to the normal 17 per cent, amounted to an extra 14 per cent, due, in brief, to the high cost of production. A still more serious situation was revealed when it was found that where a year

ago there were 300,000 heifers being raised for dairy use, this year there are in round numbers, only 225,000 or one-quarter less.

In sheep the losses have been very heavy from the hard winter in the west; and a great majority of the sheep, about two-thirds of them, are west of the one hundredth meridian. The crop of lambs, roughly speaking, is said to be about 50 per cent of the normal, and in addition to that very large numbers of the lambs have gone under contract into the hands of feeders, so that fewer of them will be raised than usual. We have fewer sheep in the United States, and at the same time an enormous rise in the price of wool and in the necessity for wool for war purposes.

All this seems to me to point to a simple conclusion, which is that the world situation, the American situation, and the demands of the war all point to the necessity for a very large emphasis upon livestock production as against grain production in the United States.

It is true, of course, that the various parts of the country must produce what their physical conditions prescribe. You cannot raise peanuts in North Dakota nor truck in the Panhandle of Texas. But there is an enormous area in the country in which one product or another can be increased as the needs arise; and in that area, which is abundantly sufficient to supply all we need in the way of increased livestock production—in that area, as I see it, the need for more livestock is greater than the need for more grain.

In spite of early frosts we are likely to have in our corn crop the largest crop of any grain ever raised in any country at any time since the world began. The estimate of three and one-quarter billion bushels allowed, I am informed, for a certain amount of damage from frost, and the chances were if there had been no frost the total crop might have amounted to 3,800,000,000 or even 4,000,000,000 bushels.

There is likely to be a very considerable surplus. Feed for livestock will be in excess of animals to consume it. Thus it is estimated by a man who ought to know that the south will produce this year, beyond the supply required to feed all its livestock, feed sufficient for 500,000 head. In the south, in the corn belt, and elsewhere, we shall have an exceedingly heavy corn crop and roughage enough to supply and more than supply all the livestock we can put upon it.

Obviously, then, the situation points to that form of agriculture which, in addition to all the considerations I have mentioned, has this other striking advantage in time of war, that it can be handled with a smaller expenditure for labor than any other. You can raise more agricultural products in the form of livestock with less man power than you can grain, as everyone knows.

So the elements which indicate strong emphasis on an agricultural policy of promoting livestock production are briefly: abundance of feed, insuring relative cheapness; shortage of agricultural labor, necessarily resulting in a premium on meat products rather than on grain; a shortage of all kinds of livestock as measured by the certain demand, which means good prices for the producer; the demand for a large increase in exports of meat (we have been exporting 200 or 300 per cent more pork products than we did before the war, and we must export still more, which furnishes additional reason why prices should be high); and the fact—and it is a very important one—that even if there were no war, to export meats is vastly wiser than to export grains. For when you export wheat, you export soil fertility with it. When you export meats you create fertility and keep it at home; so that the future richness of the land argues likewise for livestock as the trend which we ought to follow in our agricultural policy.

The essential lesson of the war, as I have tried to indicate, seems to me to be that teamplay, to a degree hitherto unknown, has become the indispensable condition of national success. If, then, we are to stimulate agriculture in the United States, and if the trend of our agricultural policy looks toward livestock rather than toward grain, then it is absolutely essential to bring to that stimulation this same point of view of teamplay. Therefore the organization of American farmers has become indispensable. The spread of coöperation among the producers of livestock and of grains on the farm is an essential factor in winning the war.

The farmer is a business man like any other. He is in business to support his family. It is true that he earns a very much smaller return than any other business man—probably less than \$400 a year in money for his work. He has, in addition, a house to live in and produce from the farm worth perhaps a couple of hundred dollars in cash.

The farmer, like anybody else, will remain in the business, or in

any particular part of the business, just in proportion to the chance he has of making a living. He will be guided in his business, like any other business man, by his chance of profit and success. He will trend toward grain, livestock, truck, other conditions being equal, according to his belief that there is in any one of these lines a reasonable return for his labor and his investment.

We have dealt with the farmer for years as if he were a fixture that could not move away; as if he were a mere maker of agricultural products, and not a man with a family to whom the ordinary human considerations are just as important as they are to anybody else. Now we have come to the time when the nation as a whole must recognize the dominating position which has come to the man who produces food from the soil. Although our population is but one-third agricultural and two-thirds industrial, still the emphasis today is on the man who grows things out of the ground rather than on the man who makes things in a factory.

If it is true that the general lines of policy I have tried to outline are sound, then the time has come when a reconstruction of the national point of view about agriculture is absolutely essential. Not less so is the reconstruction of the farmer's point of view about himself. The introduction of coöperative methods among producers is absolutely vital to success in our agricultural policy.

An integral part of the success of any agricultural policy we may adopt must be the recognition of the dominant part the farmer is playing in the affairs of this country and of the world. He has been set aside. He has not had his fair share of influence in the government, nor his fair share in the benefits of government, and he is beginning to understand it and to consider what he shall do about it.

If we are to meet the obligations that have been imposed upon us by the war, the first of which is the production of food on a large scale, we must do three things: first, direct our efforts mainly toward livestock rather than mainly toward grain; second, convince the agricultural producers of this country that their efforts in producing livestock will be met by a fair remuneration when that livestock comes to be marketed; and third, see to it that the farmer has what he has never had sufficiently before, his fair and reasonable share and part in determining the plans and policies of the country, of which he forms the underlying and most essential part.

THE IMPORTANCE OF MILK AS A FOOD

BY W. H. JORDAN,

Director, New York Agricultural Experiment Station.

This people is now taking account of its resources, and in our analysis of the situation forced upon us by the demands of war we have discovered some of our weaknesses. One of these is the woeful lack of knowledge of nutrition, and another is that we are beyond all measure a wasteful people. The war is a great national calamity, but in the midst of its evils there will come to us certain benefits which in part will be the great awakening we have had to our bad eating habits, our poor economy and our lack of an efficient administration of our food supplies.

The great problem which really faces us is both the production of food energy and its utilization in such a way as will secure the maximum benefit. While we must, of course, consider the constructive value of foods and certain peculiar physiological relations, the dominant question relates to the store of energy or, using a more common term, of fuel with which to maintain human activities both at the seat of war and with our own people.

We naturally ask then what production most fully conserves our resources. I am convinced that the dairy industry should receive unusual consideration and encouragement under the circumstances in which we find ourselves. My reasons for my belief are these:

First. It has been shown beyond question, as Dr. McCollum has pointed out,¹ that milk is an exceedingly important food for all of us and especially for young children and all persons who have not reached the adult stature. This is true because it contains certain essential compounds, the nature of which is not known, that are absolutely necessary to growth—compounds which are not furnished in such abundance in any form of meat product. The state which I represent has approximately eight million persons in its cities, and it would be nothing short of a calamity if there should come to us a milk famine, or anything approaching it, because of the effect upon the physical development of the young in those cities.

¹ See page 95.

Second. With the exception of pork, in which the fats are the dominant compounds, milk is the cheapest animal food in the market at the prices which now prevail. For some reason the public is exceedingly sensitive to any increase in the price of milk, while it treats with comparative complacency an increase in the cost of meats, flour and other staple products. It is important, therefore, if we are to maintain the necessary supply of milk, that the public shall be educated to understand its relative value. A celebrated authority, Dr. Graham Lusk, has recently stated that a family of five cannot afford to purchase meat until it has bought three quarts of milk.

If the prevailing cost of milk production continues, producers must receive a higher price if the output is to be maintained at its present level and this means a larger cost to the consumer unless the expense of distribution is reduced. Consumers are urged on the ground of economy, and also in order to increase our export of meats, to substitute milk for meats in the diet. If this is done, milk production must be increased. Such an increase will be accomplished neither by declaring this to be a governmental policy nor by fixing the price of milk unless farmers find that the returns from their cows allow a living profit. The problem is therefore a consumer's problem unless the cost of distribution can be lessened.

Third. The food energy of milk is more economically produced than is the edible energy in any other animal product, with possibly the exception of pork. This is equivalent to the statement that there is returned for human utilization from the energy of the forage and grain consumed by animals a larger percentage in milk than in other animal products, with the possible exception mentioned. There is abundant data to show that the cow has a great economic advantage over the steer as a food producer.

Some years ago in attempting to study the influence of food upon the composition of the animal's carcass, I grew four steers on rations that were accurately measured and analyzed, and at the end of varying periods the animals were slaughtered and a careful separation and analysis was made of the edible portion. This has enabled me to calculate the relation between the energy of the digestible food and the energy in the edible meat product. With the younger animals, seventeen months, the available energy consumed was to edible energy stored as 11.6 is to 1. With the older

animals, twenty-seven months, the available energy consumed was to the edible energy stored as 13.4 is to 1. The energy relations in the growth of the last ten months was available energy consumed to edible energy stored as 11 is to 1. If we consider a single day's results of the mature animal where the gain is two pounds, the available energy consumed is estimated to be to energy stored as 6 is to 1. If the steers which were analyzed had received a more intensive ration and therefore made more rapid growth, the energy cost of production would probably have been reduced.

At the New York Experiment Station records were made of the food consumed and the milk produced during sixty periods of lactation, involving twenty-seven cows. It should be stated that these are high grade cows and that the cost of production with such animals reaches its minimum. It was found, however, that the approximate food energy cost of the energy stored in the milk solids was approximately as 3 is to 1. It should be stated, of course, that quite a large part of the food of both steers and cows is forage, which is not available as food for man, and therefore the energy which is stored from these coarse materials is so much gain to the sum of human fuel. This is quite different when we consider the consumption by animals of the cereal grains that are available for human consumption. With these grains a greater economy is reached by the production of dairy products than of meat products. It is a very conservative statement to assert that under the very best possible conditions of production with both classes of animals, the cow is more than twice as economical in her use of food energy when we consider the output for human use than is the steer or sheep.

I am convinced, therefore, that in the eastern portion of the country or in any portion where large populations of cities are to be fed, the dairy industry should be encouraged in every possible way, not only because of the essential relations of milk to the welfare of growing individuals but because our cheese and butter should serve a useful and even a necessary function in our army and among the people with whom we are associated in this great conflict.

THE SHEEP INDUSTRY OF THE UNITED STATES

BY A. C. BIGELOW,

President, Philadelphia Wool and Textile Association.

We have been forced to consider the fact, emphasized by rising prices during the past few years, that there is a problem before us in relation to the food and clothing supplies for our population of one hundred and two million people now within our country. The present acute situation in regard to our food supplies and our supplies of wool, as a result of the world war, is simply a situation towards which we have been gradually but inevitably drifting for years past. We have exhausted the areas of the fertile lands which were once the safety valve for our growing population, and we must now obtain a greater production of those things which are essential for our subsistence by an increase of efficiency and intelligent development of agricultural methods. We shall, moreover, be forced to utilize portions of our country which have been previously neglected for the more accessible and more fertile portions of our land. A few figures will illustrate the diminishing per capita production of some of our leading staples and exhibit a reason for the advance in the cost of many of our necessary food commodities. During the period covered by the last census, from 1900 to 1910, I submit the following figures:

Acreage under cultivation *per capita*: A decrease of 10 per cent

Butter production *per capita*: A decrease of 10 per cent

Corn production *per capita*: A decrease of 21 per cent

Oats production *per capita*: A decrease of 11 per cent

Wheat production *per capita*: A decrease of 15 per cent

The decrease in the number of sheep per 1,000 population from 1900 to 1915 was 48 per cent.

It is probably worth while to explain briefly the development of the sheep industry in this country. As you will readily understand, it was natural that it should start in the eastern states, as the original merino sheep came mostly to us from Spain in the early part of the last century. The New England states in the early days showed quite a rapid development, and Vermont was at one time a large sheep producing state. In that state the number of sheep were as follows:

VERMONT	Year	Number of sheep
	1840	1,681,819
	1860	752,201
	1880	439,870
	1915	47,415

Following the advance westward of population, sheep were largely kept in New York, Pennsylvania and Ohio. During the ten years from 1870 to 1880, there were close to 5,000,000 sheep in the state of Ohio. In 1890 the number dropped to 4,000,000, while in 1915 they were reduced to 2,100,000. Still advancing westward, and following the lures of cheaper lands, we find that Texas has as follows:

TEXAS	Year	Number of sheep
	1880	3,000,000
	1890	4,260,000

But with the advance of the farming element, restricting the areas of cheap land, Texas dropped in 1915 to 1,600,000 sheep.

In California we find as follows:

CALIFORNIA	Year	Number of sheep
	1880	5,727,000
	1890	3,373,000
	1915	1,900,000

During this period it should be noted sheep were kept for the wool product alone. We were educated as a beef-eating people, and our immense supplies of cattle made beef cheap. Mutton at this time was an insignificant factor in the profit and loss account. This situation has now changed completely. The supply of cattle is decreasing so materially that beef is advancing greatly. Mutton and lamb have been improved in quality, and there is a good demand for both today. Results carefully taken at the Pennsylvania State College show that the mutton product of sheep represents about two-thirds, while wool today represents about one-third, making wool a by-product; so that the market fluctuations in wool, which will always occur to a certain extent, will not have any great effect on the profit account of the sheep industry.

With the restriction of the cheap lands in Texas and California, the bands of sheep were driven up into the mountainous grazing limits of the northwestern section, and there we find for many years a great increase in the number of sheep, especially in the states of

Wyoming, Idaho and Montana. But here, too, within the last few years, we can find from the same cause a decrease in the flocks—the homesteader and farmer are coming in, the ranges are restricted and production has decreased. In effect, the whole industry has moved like a great wave, on the lines of least resistance, utilizing cheap grazing lands as long as they were cheap, and showing a decrease as soon as they were occupied for agricultural purposes. The great northwestern grazing territory, comprising the states of Montana, Idaho, Wyoming and Oregon, containing vast areas of free or very cheap grazing lands, has been the great source of wool and mutton production during the present century. These four states in 1916, out of the total wool clip of the United States of 288,000,000 pounds, produced 86,255,000 pounds, or about 30 per cent.

There has been during the past seven years, however, a continued shrinkage in the production from these four states, caused by the over-stocking of the ranges. During the session of the last Congress an act was passed opening up the government lands in this section to the farmers in tracts of 640 acres. We sent a special agent into this section to make a survey of conditions and to locate breeding stock. The reports we have received from him and from other sources, indicate that there is a great rush of farmers coming into this section and taking up these 640-acre tracts, and in consequence the range is being broken up to such a great extent that those who have been maintaining sheep there are being forced to dispose of their flocks, and the evidence is conclusive that there will be a continuous decrease in this section. It is quite evident, therefore, that the population of the United States will be seriously affected by this rapid decline in this great sheep territory. There is only one source left open now from which we can obtain an increase of sheep production, and that is in the farming sections east of the Mississippi River, and in the unused land areas of the south.

In all matters political, social and economic, change is the law of the universe. As in the past, economic conditions operated to drive the shepherd of the East out of business, and to develop the great sheep interests of the western grazing lands, so today again, economic conditions are forcing the western flockmaster out of business and opening up a favorable opportunity for the profitable maintenance and development of the sheep industry in the older sections, which have been so long neglected.

The situation which presents itself to us, therefore, shows that population for a number of years has been encroaching upon our production of food and of wool for clothing. It shows that the conditions brought about by the great war in progress have developed a world shortage of wool supplies, and it shows that our own domestic production in the great northwestern territory will develop a very decided decrease from that section, which has been such an important factor in our wool production. Based on all the premises submitted regarding the extraordinary market which will be opened for wool especially, and for the product of meat which our rapidly increasing population must have, it is safe to assume that prices will be maintained upon a very high level, and that the opportunity presents itself to those who have lands suitable for the maintenance of sheep to engage in sheep husbandry as a very profitable business.

I have touched upon sheep husbandry mainly in connection with its meat and wool product. There is another consideration which I wish to emphasize, and that is that the sheep is known to be one of the best fertilizing agents of any kind of livestock. This has long been generally recognized by shepherds, and their appreciation of this fact has been shown by their use of the term "The Golden Hoof," as applying to this feature of sheep husbandry in its relation to the fertility of the soil.

The leading cause for the decrease in the sheep population in the farming sections during the past ten years, has been on account of the depredations of dogs upon the farmers' flocks. In support of this statement I beg to quote the following from a bulletin issued by the United States Department of Agriculture:

Sheep-killing dogs are not only recognized as the worst enemy of eastern flockmasters at the present time, but are known to be the principal cause of so marked a decrease in the number of sheep kept on farms. The moral effect upon all persons who have seen sheep killed, injured or frightened by dogs is far more destructive to the industry than the actual damage sustained.

The evidence is conclusive not only as to the effect on the sheep industry in our farming sections in the past, but it is also conclusive that this is the great factor which is now deterring our eastern farmers from going into the sheep business again. It seems strange that an intelligent nation striving for efficiency in all things, should allow a useless economic parasite like the dog to throttle a great industry, and yet such is the fact. There is no problem more neces-

sary for solution today than this problem of protection of sheep from the attack of dogs. It is necessary for the public to recognize this situation and interest themselves to see that there are proper laws enacted which will control this dog menace. It is not only necessary to have proper laws enacted, but public sentiment must see that these laws are *enforced*. No other animal is allowed to roam at large to act as the destroyer of the property of citizens. The aim, therefore, of proper legislation should be that those who insist upon keeping dogs shall keep the dogs where they belong, and that is upon their own premises or under their direct control. The fundamental basis of the social fabric is that every citizen is entitled to the protection of the law for his life and for his property. The fundamental basis of good morals is that no one has the right to do anything which will do damage to his neighbor. Let him who will, keep his dog and enjoy his companionship. We will concede all of his good points, but knowing his destructive tendencies and his predatory nature which he has inherited from his wolfish ancestors, let it be fully recognized that the dog must no longer be allowed unbridled liberty to follow out his natural instincts of destruction. Under the present conditions and those which face us for the future, it is an economic crime to allow the dog to further handicap the development of an industry which is so vital to the nation. Great areas of land are idle and unproductive today which can produce those things we need. The decision on this matter rests with the people.

The Philadelphia Wool and Textile Association started its campaign to awaken interest in the sheep industry about two years ago. It has been necessary to overcome the inertia of twenty years of neglect and indifference. A wide and persistent propaganda has been instituted and directed to awaken the interest of the public to this as an economic proposition, and to awaken the interest of the farmer to this industry as a profitable and desirable part of agriculture. It has been recognized that it is necessary to develop this proposition on broad, intelligent, and constructive lines. The present generation in our farming communities to a large extent do not know or value sheep, for the older shepherds have passed away. It is evidently desirable that the boys and girls of the coming generation should be educated to a knowledge of and a love for this useful animal. One of the lines of work therefore decided upon, is to

endeavor to provide for the organization and development of as many boys' and girls' sheep and lambs clubs as possible. In the old days, too, there was no proper, scientific recognition of the value of breeding. The influence of pure bred stock and its value was not appreciated. The further purpose of our work is to develop an improvement in the breeds of sheep by the use of pure bred stock in breeding, and in connection with this, to obtain a better standardization in communities, in the same way that the various sections of England have developed a standard production, the value of which is known and recognized. It is recognized also that there is an evident necessity for an improvement in the system of marketing and distribution, both for lambs and for wool. To effect this, it seems highly desirable that there should be developed to the greatest possible extent coöperative associations of the farmers. This has been found difficult to obtain in the past, and will undoubtedly be a slow process, but will surely be accomplished in time.

In order to develop better marketing facilities for the wool product for the farmer, the Philadelphia Wool and Textile Association has established The Philadelphia Wool Auctions, the purpose of which is to provide the means whereby the individual farmer or such coöperative associations may be able to sell their wool in one of the great primary markets of distribution at public sale under open competition to the highest bidder. The development of this proposition, like others intended for this purpose, must naturally be slow, but it seems sound and logical and should win out in the end.

The stage has been reached, however, at the present time, where the value of sheep is being recognized by the eastern farmers, and they are desirous of obtaining breeding stock. There has been but one source of supply for this and that is from the western range. It will be readily understood that there is a big hiatus between the farmer in the east, who desires to buy a small flock for his farm, and the far distant range, where the sheep are maintained in flocks of from five thousand to fifty thousand. In order to bridge this gap and to afford an agency by which a transfer could be made of the western sheep into the east, and the distribution made as wanted to the farmer, the Interstate Livestock Company has been organized and incorporated, which is acting as the financial agency for this purpose.

The capital of the Interstate Livestock Company has been subscribed by public spirited men who are operating this company on a non-profit basis. Through this agency breeding sheep have been brought in large quantities from the western range, and are being distributed throughout the eastern farming sections.

The effort to restore sheep husbandry to the eastern farms has therefore reached a definite, practical stage of operation. There is evidence that there will be a greater appreciation of the value of this industry by every one. Though there are many obstacles and problems in the way to be solved before sheep husbandry will attain its full development in our farming sections, there is every hope and assurance that it will obtain its rightful recognition and be restored to its proper status in connection with eastern agriculture. It will not be accomplished in a day nor in a year, but the logic of events and its imperative necessity, are bound to bring about its ultimate establishment.

THE WAR AND OUR POTATO INDUSTRY

BY LOU D. SWEET,

Potato Expert, United States Food Administration; President of the Potato Association of America.

Our entrance into the war against Germany brought us face to face with serious economic problems—greater problems than we were ever confronted with before in the history of this country. One of the greatest of these problems was that of our food supply. Not only did it become necessary for us to produce crops sufficient to take care of our own needs, but coincident with our alliance with the Entente Allies we were called upon to supply in great measure the foods needed by soldiers and civilians of the allied countries.

Our federal Department of Agriculture appealed pointedly to the farmers of this country for an increased production of all food crops. This appeal met with immediate response, often accompanied by great sacrifice by farmers themselves who had to finance their operations with borrowed capital. Particularly in the case of our potato crop has this response been tremendously patriotic; an additional seven hundred and seventeen thousand acres were planted to this crop, which early this season was forecasted by our federal

Bureau of Crop Estimates to yield something like one hundred and seventeen million bushels above the average yields for the period 1911 to 1916.

However, this emergency crop of potatoes did not have the benefit of any too great care in its planting, and this is absolutely no reflection upon the farmers themselves. Owing to the high price of seed potatoes and the inadequate supply, seed was planted which was totally unfit for use as such. One might say that culls and even peelings were planted. On top of this the price of fertilizers was so abnormally high as to make their use well nigh prohibitive. Consequently, the 1917 potato crop has been produced from poor seed, poorly nourished, and therefore does not give any too great promise of exhibiting high keeping qualities. At this writing the harvest season is about on. Meanwhile droughts, late blight and insect damage have greatly reduced the crop in sight below that which was estimated early in the season. And yet with all these setbacks we are certain to have a crop considerably in excess of the average harvest of this country.

The pressing question is: now that we have raised it, what are we going to do with it? This late potato crop, which is harvested over a period of six weeks, must serve as a great factor in our food supply over a period something like nine months. It will not serve as food over that period if the greatest care is not taken in its harvesting, storage and distribution, and this brings up one major problem in the war-made economic situation, to aid in solving which the United States Food Administration is devoting no small measure of its energy.

Let me make it perfectly clear that the Food Administration does not plan to handle this crop in the sense of acting as purchaser or distributor. Only in the case of wheat has the administration taken these extreme measures. With regard to the potato problem, the Food Administration plans to assist all normal machinery having to do with the handling of this crop and toward securing an equitable distribution of it.

■ An equitable distribution means more than most of us imagine. It means that the farmer who has produced this crop must receive for it a price which will repay him for the heavy expense of its production; otherwise you cannot expect him to plant heavily another year. The consumer must be able to buy potatoes at a price which

does not put them in the class of luxuries. Between those two extremes lies many a pitfall which can wreck the hope of securing these justices for either producer or consumer, or both.

I have tried to make it plain that the Food Administration is attempting to coöperate with normal business agencies for securing the best possible disposition of this potato crop. It has called to Washington a large number of growers and distributors to discuss with these gentlemen the best plans toward that end. And it has endeavored to impress upon these gentlemen that the only way under the sun that these results can be achieved is through a whole-hearted spirit of service on their part. The Food Administration is using no club, it merely extends to every factor its right hand of coöperation.

It has been definitely decided that potato distributors will be licensed. The trade, generally, seems to heartily approve of this plan. This license acts as a safeguard for the efficient coöperating distributor's efforts against unscrupulous practices which occasionally break out and now would nullify the best endeavors.

The Food Administration does not discountenance the storing of potatoes for the purpose of assuring the market an even, steady flow of that food product. Only in the case of storage for the purpose of bringing about an abnormal shortage in the market to the end of influencing prices, will the Food Administration seek recourse to laws which will enable it to correct such abuses. The policy of the Food Administration is strictly a constructive one. Its legal powers have been provided simply to protect the coöperation entered into by it and the whole trade.

While there is no cure-all for the problems arising in connection with the disposition of this potato crop, yet there are a number of steps which may be taken and which have been taken, to make the solution of these problems just a bit easier. For example, it was my privilege, in a measure, to influence the recent ruling of the Federal Reserve Board under which potatoes properly sorted and graded and properly stored, will furnish adequate security for warehouse receipts negotiable at member banks at a rate not to exceed 6 per cent, including all commissions.

To make such a ruling work out successfully rather than develop into a flat fiasco, we must have some standard rules for grading to tie to. In coöperation with the federal Department of Agriculture,

the Food Administration has worked out these official grades which have been approved, and which will serve as a basis for the efficient operation of the Federal Reserve ruling.

Many of us are familiar with the story of the reclamation projects; many of us know of the near-tragedy which has surrounded the settlement of many of these areas. Pioneering in America was not ended in '49. It goes on today on these projects, and I know of no more beautiful example of American aggressive fortitude than exemplified in the daily life of many of our reclamation settlers. So many of these settlers are heavily in debt that I am taking this opportunity to record what to my mind is typical of America's response to the President's appeal for increased production of food crops. As I say, many were heavily in debt, but they have borrowed money to increase their production of potatoes—borrowed money for seed, implements and labor. Their crops have been good, for many of the projects consist of the best potato soil in this country.

When harvest was about to come, they faced inadequate storage facilities for this crop. For any government agency to advise these people that the thing to do was to erect sufficient storage capacity, would have been about as helpful to them as a treatise on dietetics would be to a starving man. They would have built additional storage facilities if they had had the funds to do it. Secretary Lane, of the Interior Department, with the Reclamation Service officials, stepped into this breach and loaned government money to the project settlers to take care of this problem. The large shippers of potatoes off these projects throughout the country assure us that there will be little or no loss on this crop due to lack of storage facilities. This, of course, is good to know. It takes a load off our minds.

Early this season, and even now for that matter, there has been a more or less general thought that in view of our increased production of potatoes it would be necessary and highly economical to put great quantities of these through processes of dehydration. The dehydrated potato is merely one which has been sliced or shredded, dried of practically all its moisture, and so put in a form to keep well high indefinitely. Dehydrated products lose nothing of their original nutritive value, but they do lose bulk and therefore economize in the matter of freight charges and storage space.

During the Boer War the British government had prepared for

its troops tremendous quantities of dehydrated vegetables. These were usually made up in mixtures of potatoes, onions, carrots, and the like; one hundred pounds of which dried product are said to have made soup rations for sixty-four hundred troops. During the present war certain dehydrating firms in this country and Canada have received large contracts from the British government for this same product.

In the Food Administration we have looked carefully into the possibilities of taking care of a goodly portion of our surplus potato crop by means of dehydration, but from our findings we are not inclined to recommend the investment of additional capital in such enterprises. As a matter of fact one firm alone in this country is prepared on short notice to furnish up to several million pounds of dehydrated potatoes monthly, a quantity sufficient to care for any needs of our army or navy. Nor is there at present any great general public demand for this product. It has not been exploited, and even though it were it is doubtful if housewives would prefer a dry product to the fresh one, and with few exceptions the fresh product is available throughout the year.

There are some limited outlets for the surplus, particularly culls, in the manufacture of potato starch and potato starch flour, and potato flakes for livestock feed, but these outlets are limited. So in the last analysis we come back to the conclusion that the greater proportion of this crop must be consumed in the fresh state as food for human beings. These, briefly, are some of the problems which the administration has attacked.

Because my experience in the potato industry has been primarily that of a grower, instinctively I look at the present situation from the grower's viewpoint, and I can see a number of tremendous lessons which this war is teaching potato growers of this country. It has shown us that we are not nearly as efficient potato growers as we should be, even in times of peace. Our yields have been discouragingly small when compared with those of other countries. This has not been because we did not have the soil or the practical knowledge necessary to produce larger crops. It was simply because we have allowed ourselves to drift along in a rut. Producing large crops per acre of prime potatoes is no mysterious process to be worked out by black magic. It merely consists in first building up the potato soil, and then giving that soil the right seed and the right

treatment after the seed has germinated. A potato soil must have plenty of humus and all other forms of plant food. The seed itself must not be left-over degenerate, but a seed true to type and coming from a strain that is vigorous and highly productive. That sounds too simple to warrant serious thought. Just these simple things we have overlooked, and we will have to go back to them, if during the war and after the war we expect to develop our potato industry to a plane of greatest efficiency.

In the future we must grade. Those of us in the business know that farmers and dealers are both parties to the wrong when it comes to a total absence of grading in many cases, or careless grading in others. If one competing buyer at a station will not insist upon the farmers bringing in graded potatoes, naturally his competitors will have to buy on the same basis, and naturally you cannot expect the farmer to take it upon himself to try to revolutionize the other end of the business. He is going to sell what the other man will buy. Human nature today in the potato game is human nature before Christ, in Babylon.

And the more we grade, the more culls we will have, and the more culls we have the more we will have to find a place for them other than the dump pile. Our Department of Agriculture has found that the cull potatoes when properly put up make a silage the feeding value of which is equal to that of corn silage. Poultry investigators have found a place for the cull potato in the feed ration of laying hens. I might enumerate a great many other uses for cull potatoes but that is beside the point. The point is that we must encourage stricter grading with its consequent increase in the number of culls by exploiting legitimate and profitable uses for this cull stock. We are investigating these uses now and unquestionably many of them will be of great value during this war emergency.

But if we let it stop when the war stops, if we let any of these agricultural economic reforms lapse when peace is declared, then we will have killed the greatest chance for agricultural and economic advancement that has ever been open to us since Christopher Columbus planted his foot on American soil.

It is a good thing to be able to see a silver lining in any cloud. I can see one to this war cloud, and it is made up of the reforms and improvements in our economic and social structures that we have had to design so as to meet the great crisis, and my one hope is that these improvements will stay with us.

URBAN AND SUBURBAN FOOD PRODUCTION

BY CHARLES LATHROP PACK,

President, National Emergency Food Garden Commission.

My friends, I rejoice with you as a fellow-citizen in all the town and city people of our country are doing for food production and food conservation. I have recently seen many community canneries so ably conducted throughout the country as to set a splendid example of productive thrift.

We are glad that the housewife is doing her part in this nationwide, food-producing and food-conserving movement. The work of gardening, of canning and of drying vegetables and fruits is abroad in the whole land from Maine to California, and from the Lakes to the Gulf, and has justified all the expectations of success. Let us consider for a moment what this means. It means that one million, one hundred and fifty thousand acres of city and town land are under cultivation this year—the largest part heretofore non-producing. Urban and suburban America today is a vast garden as the result of the impulse given to the nation by the National Emergency Food Garden Commission. This area of fruitfulness embraces back yards, vacant lots and hitherto untilled tracts of land in and around nearly every city, town and village in the country. Our country-wide survey locates nearly three million food gardens, but this is not the best of the story.

It is conservative to state that by the planting of gardens where none grew before the nation's food supply has been increased to the extent of more than \$350,000,000. The canning and drying movement has brought back to thousands of American households an art almost forgotten since our grandmothers' days. This particularly applies to the drying of vegetables and fruits which this year, in addition to canning, is being done by good housewives far beyond any anticipation.

There is much evidence that our food gardens are helping our people to feed themselves more reasonably. The Editor of the *North American Review* says in the September number:

Last spring, at garden-planting time we urged the increase of production, partly through intensified culture, to increase the yield per acre, and partly through the increase of acreage by the cultivation of neglected fields and even small plots in

suburban and urban areas. How well this policy was executed is seen in the Report of the National Emergency Food Garden Commission, that the gardens of the country were this year more than trebled in area. Beyond question, this achievement has much to do with the fact that the increase in price of garden products in the year was only twenty-two per cent, or less than one-fifth the increase in the price of breadstuffs.

The results will mean much for food this winter f.o.b. the pantry shelves of the homes of America and help us, by feeding ourselves, to feed our boys of the army and navy and our allies. Do we all realize that we already have a million men under arms in our army and navy and that there will be at least two million of them by spring? They must all be fed and the soldiers and people of France and England must be fed and to a large extent fed by us and we are going to do it. In the canning and drying of vegetables and fruits our women are contributing their share.

The glass jar manufacturers of this country have delivered to September 1 about one hundred and nineteen million quart glass jars. A survey of the household supply of jars used for canning and preserving in some twenty typical towns throughout the country shows that the housewives of America this year will use but one new jar to over three and one-quarter old glass jars on hand, and all of them, old and new, have been filled or will be filled. Thus you see that speaking in conservative terms the home women of our country will conserve more than four hundred and sixty million quart glass jars of vegetables and fruits—certainly three times what has been accomplished before. I think this is inspiring. The drying and dehydrating has also added very largely to the food supply by preserving vegetables and fruits and in this way providing the fruitfulness of summer for the needs of the winter.

The commission is of course gratified at the success of its work in behalf of food thrift. Great credit is due the press of the country for its splendid and liberal coöperation. The popular interest that has been aroused in gardening, canning and drying is significant of the American determination to neglect no opportunity to strengthen the nation's war-time position.

Much has been learned this year by town and city people about the cultivation and value of the soil and the conservation of its products, so that we may look with faith and courage to still greater results for the next season, when the need will be even more urgent.

I think this is a hopeful picture, and in coming here today to meet you all, I come simply as another worker with the simple proposal that urban and suburban dwellers continue their good work in joining with us, that we may jointly and with the best intelligence that we can mutually bring to bear, all of us, contribute our part in fighting with food. We are going to do our duty in this hour of trial. The fact is that this war is as much our war as it is the war of Europe, and unless we can keep the women and children of our allies fed, the western line of defense may be thrown back toward the Atlantic seaboard, and it is well within possibilities in that case we would see the enemy's army even in Pennsylvania and at Philadelphia.

I want to praise the good women of this country because it is the women who really understand what the war means. It is my experience that the patriotic women of America have been practicing thrift and that they know full well how to practice economy without parsimony, but this year in addition they have added to their duties the patriotic work of food production and food conservation. A thrifty woman is a blessing to mankind, and the women know very much more about real thrift than the men. Many men are extravagant in matters of this kind and if they become thrifty, as they think, they in reality become stingy. Stinginess is not thrift. So, I say, all honor to the women of America who are doing their part.

We are going to win this war and we are going to win it by fighting with food. You cannot starve Germany; Ambassador Gerard has told us so, and from the available evidence I believe he is right, but we will starve our allies if we are so shortsighted and small and mean and unpatriotic as not to deserve the name of Americans. This must not be! It will not be!

We face a race of people under a government intent upon the mastery of the world. The war seems far away to most of us, but we are in reality fighting for our national existence and our fate as a free people. We will realize this more when the great stream of wounded and maimed of our soldier boys are sent back to us from France. But, as I say, we are going to win this war. Our soldiers are going to do their part. We are sending our friends and our sons to the front and we who are at home not fit to carry arms, men and women, can carry on the good fight and do our part quite as well as the man with the gun. Thrift will do her part in securing success

but without thrift we will fail. I am sure you are doing your part and I feel sure of victory—a victory of arms and a victory of thrift—and when that victory comes there may be erected a simple monument commemorating this greatest event in modern history, and I hope there will be inscribed on it these words: *For Democracy and Civilization—A War Won by Free Men and Free Women for Humanity.*

THE POINT OF ORIGIN PLAN FOR MARKETING

By A. B. Ross,

Executive Secretary, Department of Food Supply, Committee of Public Safety of Pennsylvania.

The object of this plan is the feeding of each community, as far as possible, with food from within its own natural trading area, and the laying by of dried, canned and stored reserves of food from local sources; the keeping of community money within the community area, and using it for community development; the making of each community a self-contained, self-sustaining, compact trading unit; the development of the smaller community centers into exporters of food to the larger cities, reversing the present system whereby natural food-producing areas are importing food.

The plan is not arbitrary; it has been built up in ten years of patient study, labor and experimental marketing carried on jointly by farmers and myself. It is readily within the comprehension of the farmer, and, in its present form, has met with the instant, unqualified and enthusiastic endorsement of the great mass of farmers to whom it has been submitted, and who joined the ranks of non-producers of city food because they could not make production profitable. It requires no new business machinery.

It incorporates three fundamentals of economic distribution:

- a. Reduces transportation to a minimum.
- b. Organizes and standardizes food instead of seeking to organize and standardize farmers.
- c. Places responsibility exactly where it belongs.

The Transportation Situation. Altoona, Pa., furnishes a typical illustration of the system of food supply ruling interior cities and

towns. A food survey in 1915 showed that of a total annual food bill of \$4,200,000, not less than \$1,680,000 is spent for a riot of transportation and retransportation, handling and rehandling, commissioning, jobbing and the allowance for waste which the retailer must make knowing the condition of the produce when it reaches him.

Organizing the Farmer. The United States Census figures for 1910 show that about 20 per cent of our perishable food is the product of truck farms, fruit farms and other intensive operations. Eighty per cent of our perishables come from the garden, orchard, flocks and herds of the *ordinary* farm. The weekly sales of fruit, vegetables, poultry, eggs and all dairy products from these ordinary farms—of which there are over 200,000 in Pennsylvania alone—average only a little over \$6. These farmers are engaged in the production of staples as their serious business; the production of perishables is a minor operation. And it is sheer folly to talk of organizing farmers for a \$6 a week business, no matter how much we, at the other end of the line, figure such organization would help to solve our problems.

Identifying the Problem. The comfortable assumption of the city man is that it is the duty of the farmer to increase production so that food costs may be lowered, but it is his duty to charge a profit on the shoes and the clothes and the hardware which he sells to the farmer. Talk to the city man about selling his merchandise to the farmer at a loss because the farmer needs it, and something will happen.

Producing and marketing food is a business and not a fad. Outlets to be of value must be adequate, available at all times and must offer a fair chance of profit. What the food business needs is not faddism, grafting organizations, which have a purely selfish or an ulterior purpose, nor sentimental propaganda, but stabilizing, being put on a basis of bargain and sale, supply and demand, production and distribution which will prevent gluts and waste and insure to the farmer a steady margin of profit without which no business can hope to survive.

The very character of the problem, the requirement of organization, capital, brains, executive force, ability, fairness and a willingness to serve in a quasi-public undertaking, takes it away from the individual producers and the helpless consumers and puts it squarely up to the best business brains of each community.

There is no economic pressure on the farmer to produce food at a loss. He has his three meals a day whether we of the city eat or starve. He is just as much interested in the cost of our food as we are in what he pays for farm implements, fertilizer and seed, and not a bit more. The real economic pressure of the food problem is exerted directly upon every kind of employed labor and indirectly upon every employer of labor to whom the bill for the food is ultimately handed either in the form of higher wages or lowered production due to lowered living standards. Clearly the problem for the city and town is one for its business men whose dollar's worth of labor yields its greatest profit when that same dollar buys the largest quantity of wholesome food.

The Standardizing Plant. The first necessity is a fully equipped standardizing plant in charge of a competent manager, the plant to be at a place convenient for receiving, shipping and distributing the products of the farm, orchard and dairy. This plant must be the link which unites the farming sections of the community with the city section, and its location must be determined with a view to the interests of each.

The Purpose of the Plant. The purpose of this plant is not to standardize or organize farmers; it is to organize and standardize the food supply of an entire community. The latter purpose is possible of accomplishment, the former is not.

The plant is emphatically a manufacturing one, to which the producer delivers raw food materials to be turned into finished products by grading, packing, labeling and preparing for display and sale in the retail markets. No amount of organization of farmers and appointment of committees can take the place of the painstaking work which lies back of the title "expert"; and the preparation of food for market is expert work of a very high grade. The coöperation of inexperienced individuals will not create experience of the necessary kind.

All the American farmer needs to know is that his rough products will, in his home town, go through a course of grading and preparation which will assure them first choice in home and nearby markets, that the outlet is sure and will be profitable, and he will produce to the point of choking the outlet. It is the lack of an *adequate market at a reasonable profit* which is today strangling the greatest source of our food supply.

Equipment of the Standardizing Plant. Following is a list of the equipment needed in a standardizing plant: full equipment for the grading, wrapping, packing, handling and shipping of the various food products; special containers for local use with food furnished the home town; canning and evaporating units for handling the surplus fruit and vegetables each day to prevent waste, and for handling all fruit and vegetables during times when market depression makes canning more profitable than shipping; storage room for containers for fresh and canned products; modified cold storage for use during the hot weather; local ware or display room for sales to retailers and, if desired, to associations of consumers; and *ultimately*, a fully equipped cold storage for holding all surplus butter, eggs, fruits, vegetables, meats, etc.

A Suggestion for Location. If at all possible the plant should be located next to the ice or electric light plant. Waste steam and electric power furnished on meter charge, will greatly reduce the original investment and the unit cost of many operations.

My experience with farmers has developed beyond a peradventure two important facts:

1. They will not risk cash in financing the operation; and
2. They will cheerfully turn over a part of their fruit and produce in exchange for non-assessable stock in the corporation.

The farmer is willing to give his long-time note to pay for his stock, provided he is protected by a clear contract permitting him, at his option, to pay the note either in cash or an equivalent amount of fruit or produce.

Opportunity for Boys and Girls. In many cases arrangements can be made, on terms satisfactory to parents and children, whereby the latter can be interested in producing for the corporation as their opportunity to earn and save money for some cherished purpose. There is no need to theorize on this subject. The success of the boys' and girls' club work under less attractive conditions has been considerable. It will be greater where the opportunity is broader, made certain and protected, as it can be, against unfair parental interference. Money earned by the children can go through the regular juvenile savings fund channels. The city will get more food, educate more farmers and form character in more of her future citizens.

But before the standardizing plant with its desirable operations

can be established in community favor, the city man must learn that furnishing a steady, reliable and cheap supply of wholesome, palatable food for his operatives is not a problem to be left to the nearby farmer or the operative, but one for the manufacturer himself, since his production costs are immediately affected.

The banker must learn that constructive banking requires that a part of the community capital be devoted to the development of agriculture, to the end that no part of the community may fail in its normal growth, and that the interdependence of all parts may be preserved.

The farmer must learn that his connection with his product must end with its delivery at the plant; that the much dreamed of coöperation has its line fences; and that efficiency and profit are inseparable in his work.

And the manufacturer, the banker, the tradesman and the farmer must learn that in the coördination of their departments lies the restoration of that lost equilibrium between town and country which must be restored to prevent national disaster.

LESSONS IN SOLVING LABOR, CREDIT AND OTHER PRODUCTION PROBLEMS

BY A. E. GRANTHAM,

Professor of Agronomy, Delaware College.

In the past few years considerable attention has been paid to some of the economic factors that influence food production, but it was not until 1917 that these conditions became a matter of grave concern. Our country awoke to the fact that there was a decided shortage of foodstuffs and that our participation in the war had greatly increased the demand for these products. Not only was it necessary to supply our own needs but those of our allies as well. This threw the burden of increased food production upon the United States in a way it had never before experienced. Labor was scarce; men were sought for military service, for factories, for transportation and for the farm. For nearly three years there had been a gradual flow of labor from the farm to the manufacturing plants of war munitions. The spring of 1917 brought the country

face to face with the problem of preparing for war and of greatly increasing the production of foodstuffs. Immediately plans were inaugurated by the federal government and the various states to increase the production of food products throughout the country. Such a program never before had been attempted. Much had to be learned as to the best manner of handling the problem. The fact is, the country knew very little of the actual resources of the farmer for meeting this heavy obligation. For years past there has been considerable discussion concerning farm labor conditions and the inability of the farmer to secure the proper credit facilities for his farming enterprise. The food crisis brought these matters to a focus in such a way that the problems will be investigated more quickly and thoroughly than otherwise would have been possible. It is well known that during the past decade there has been a steady movement of farm labor from the country to the city. This movement has been more marked during the past three years, since our industries have been largely engaged in the manufacture of munitions and war materials for foreign countries. The higher wages paid by the shop have induced thousands to leave the farm. The farmer is now facing the keenest competition in employing labor.

In the meantime the discussion of better credit for the farmer has brought about the passage of the Federal Farm Loan Act which resulted in the establishment of the Federal Farm Loan banks during the spring of this year. These are now getting started with their work, and the popularity of this movement for better credit facilities is attested by the large number of applicants for farm loans in practically every one of the bank districts.

When the food problem became acute in the early months of the year all of these problems of farm labor and credit were again brought to the attention of the public in a very decided manner. The entire nation realized that a supreme effort must be made to increase production. All eyes were turned to the farm. Agencies, public and private, have been employed to assist the farmer in securing the necessary labor and credit for enlarging his output. The first season is well over. What have been the lessons learned in solving these problems of production?

In the first place it was thought there was a very large shortage of labor on the farm. Few knew the situation accurately. An agricultural survey conducted by a few of the states has shown

that the shortage of labor was overestimated. In Massachusetts the director of the Department of Labor states that no more than 10 per cent of the supposed shortage existed. On the other hand in the state of New York fifty-six counties were carefully canvassed and it was found that there were approximately 15,000 fewer men on the farms in April, 1917 than in April, 1916.¹ The requests for help brought out by this survey from the same territory, showed that 20,000 men were needed to carry out the plans for increased production. In one or two other states, particularly Delaware, it was found that farmers had applied for additional labor when they already had on the farm more men than could be economically utilized under their type of farming. There is a suspicion that many of these applicants for farm labor expected that they were to secure additional help at a very low wage.

In all quarters it was realized that there was considerable shortage of labor. The problem was to locate the men who needed labor and to find laborers for the farm. At the outset it was seen that some sort of an organization was necessary in order to facilitate the gathering and distribution of labor. Massachusetts seems to have solved the problem in a very satisfactory manner. The committee on Public Safety of the Commonwealth of Massachusetts² employed a man as state labor agent. He in turn appointed a county representative in connection with each of the farm bureaus of the state. The county men secured representatives with each of the town and city food committees, numbering 326. The job of the labor man was to localize the work. Each of the town food committees was expected through its labor agent to satisfy the local needs for labor just as far as possible. What could not be met by the town agent was referred to the county labor agent, and what the county labor agent could not meet was referred to the state labor agent. This plan was in operation some time before it was suggested by the United States Department of Agriculture. This scheme in various forms was used by the different states. In Indiana an appeal was made to each of the 1,800 banks and grain dealers of the state to have farmers who needed labor file with

¹ *Bulletin II*. May 22, 1917. New York State Food Supply Commission.

² Letter from John T. Willard, Secretary, Committee on Food Production and Conservation, Massachusetts Committee on Public Safety under date of August 4, 1917.

them an application for the help needed. A county organization for increased food production was formed in all but four counties of the state. These organizations selected a local man or firm to act as headquarters for getting laborers in touch with farmers needing help.

A very complete organization for ascertaining the labor needs was worked out in Ohio.³ Under this plan the state was divided into twenty-one employment divisions with a free employment office in each division. These employment divisions were determined by transportation facilities, although in all cases county lines were followed. The divisions vary in size from two to seven counties. The employment office is located in the principal city of each division. In each office an agricultural division was established with at least one office man and one outside man to solicit farm labor. In every instance where new offices were established the local authorities—municipal or county—furnished the quarters, office equipment, telephone service, heat, light and janitor service. The state furnishes the employees printed forms, postage, etc., and supervises the office. The employees are paid from the war emergency fund. And the work is carried on by the Ohio branch of the Council of National Defense. Coöperating with the employment offices are fifty-five county agricultural agents who are under the supervision of the agricultural division of the Ohio branch of the Council of National Defense and are paid employees. The agent's business is to assist the farmer in every possible way and a part of his duties is to learn the farmer's needs as far as help is concerned and then forward his orders to the superintendent of the employment office of the division in which he is located. In addition to the paid agricultural agents, the county commissions have appointed an unpaid food and crop commissioner in each county and he has been asked to appoint township food and crop commissioners. These men serve without pay and assist in every way possible in urging increased acreage, surveying conditions, etc. In order to learn as quickly as possible the needs of the farmers an inquiry sheet was distributed. This asked for the acreage in crops and the labor needs. About one-third of the farmers requested help either at once or during harvest.

³ Fred C. Croxton. "War Employment in Ohio." *Monthly Review of the Bureau of Labor Statistics*. Vol. IV, June, 1917, No. 6.

To facilitate the exchange of labor between industrial plants and to get an inventory of available labor each employment superintendent is furnished with a confidential list of all the employers in his district normally employing five or more persons. This list shows the name, address, nature of business, the number of employees in each establishment and covers manufacturing, commercial and all other lines of industry. All of the larger employers in each employment division are furnished by the superintendent as promptly as possible with cards upon which they are asked to report to the division superintendent at the close of each day information concerning each employee whose period of employment terminated during the day. The employers living in the immediate vicinity in which the employment office is located will also be asked to give to employees whose period of employment terminates a card of reference to the employment office. The employers are also asked to give the employment office notice in advance of contemplated reduction in force.

Mr. Croxton, chairman of the labor division, says this plan will accomplish a number of things:

1. It will materially lessen the time lost by workers in seeking new jobs.
2. It will aid the employers in securing help to take the place of those enlisting for military service, or of those leaving for other causes, or to secure additional help as business expands.
3. It will greatly aid farmers in securing help.
4. It will make it possible to give preference in referring help to certain industries producing the goods most needed by our troops or those of our allies.
5. It will materially lessen the idleness on the part of thousands of floating laborers in the state.
6. It will produce team work among the various localities of the state.
7. It will make it possible to coöperate most effectively with other states and with the federal government.

This plan is given in considerable detail as showing the method by which one state has attacked the labor problem. None of these schemes of securing and distributing labor has been in operation long enough to warrant the drawing of final conclusions as to their effectiveness. Mr. Croxton reports that for the week ending May 12, 4,301 jobs were filled. Three hundred and forty-five farm hands

were placed on farms. On May 14, ninety-six farm hands were sent to farmers. The total number of jobs filled on that day was 884. Mr. Croxton writing to the author under date of August 9, says:

You may be interested in knowing that through this plan more than 27,000 places were filled during July and more than 7,800 during the last week. The majority of these placements are in industrial work but since the first of May more than 2,400 farm hands have been placed through the various employment offices.

SOURCES OF FARM LABOR

The chief difficulty seemed to be to locate labor of a satisfactory character for the farm. In New Jersey⁴ the labor question was handled in three ways:

1. By releasing high school boys for emergency work, giving them scholastic credit for the time employed, and in some cases organizing them into working bands.

2. By personal solicitation to the manufacturers to release competent labor for a limited period during harvests. The canvass was carried on by students who volunteered their services and received only their expenses. About 1,700 men were released for short periods aggregating 25,000 days of labor.

3. Wide publicity was given to the opportunity to secure farm labor through the federal state employment agencies conducted by the Department of Labor. Mr. Bryant, Commissioner of the New Jersey Department of Labor states⁵ that they were able to place about 1,800 men on farms to date. During July the total placements of all kinds numbered 4,879. The Department of Public Instruction of New Jersey took an active part in enrolling and organizing the school boys of the state.⁶ The school boys were organized into the Junior Industrial Army of New Jersey. This organization is divided into three divisions: agricultural, home gardens and girls' service.

The agricultural division is made up of boys fourteen years of

⁴ Letter from Mr. Alfred Gaskill, Director of the Department of Conservation and Development of the State of New Jersey, under date of August 13, 1917.

⁵ Letter from Mr. Lewis T. Bryant, Commissioner of the Department of Labor of New Jersey under date of August 15, 1917.

⁶ Letter from L. H. Carrus, Assistant Superintendent of Public Instruction, New Jersey, under date of August 10, 1917.

age and over who desire to render some service in the home, neighborhood or on any farm. The report for the week ending July 13 shows an enrollment of 7,429 with 3,950 placed on farms. The 1,200 girls who were enrolled in the first girls' service division have not yet had an opportunity of doing their full part in this work. By far the larger part of the work of canning and drying comes in the late summer and fall, and it is at this time that the girls will render their service. In the home garden work, 72,186 boys were enrolled up to July 13.⁷ This has resulted in a tremendous increase in the gardening enterprise of the state. The number of home gardens and school gardens has grown to an amazing extent. A number of industrial concerns in the state have employed garden supervisors who are helping the employees to grow crops on land provided by the employer.

An entirely new phase of the campaign for increased food production has developed in the use of inexperienced boys for farm work. A definite call for this type of labor has come from farmers in the potato, tomato and cranberry growing sections of the state of New Jersey. Farmers, with the aid of the county superintendent of farm demonstration or county agent, have organized themselves into community groups for the purpose of furnishing a camp site and suitable lodging and boarding quarters. The boys have been organized in camp groups under the personal supervision of a Y. M. C. A. leader. This leader is expected to look after the moral and social welfare of the boys, as well as to superintend their working activities. The work for the most part is paid by the piece at the prevailing wage for that type of work in the community. Careful investigation of the use of boy labor in this way in certain types of farming in this and other states indicates that the farmers are well pleased with the plan and that the boys are entirely satisfied with the working conditions. These camps have been made possible only through the coöperation of the county superintendents of farm demonstration, the state Y. M. C. A. and the school authorities.

In Virginia⁸ 800 boy scouts from the cities of Richmond, Norfolk and Petersburg were sent to the eastern shore of Virginia to pick

⁷ Letter from Dr. J. G. Lipman, Director of the New Jersey Experiment Station, under date of August 9, 1917.

⁸ Letter from J. M. Jones, Director Agricultural Extension, Virginia Agricultural and Mechanical College, Blacksburg, Va. under date of August 20, 1917.

potatoes. At Charlottesville, arrangements are being perfected whereby the boy scouts will be taken into the orchard districts to pick apples this fall. Considerable difference of opinion is expressed as to the value of boys as farm help. This is evidently due to the kind of work to which the boys are assigned. Boys from the city are not likely to be experienced in handling horses and machinery. Commissioner Koiner⁹ of the Department of Agriculture and Immigration writes that the efforts to help the farmers with boy scouts has not proved satisfactory. In many instances the boys have no experience in farming and do not know how to manage horses or to handle machinery. The farmers are busy and have no time to teach inexperienced hands when they only expect to keep them a short while.

It will be noted that some of these plans for securing labor are only temporary. Methods of enrolling labor such as have been adapted by Massachusetts and Ohio seem to meet the situation more satisfactorily. A complete organization of the agricultural and industrial labor resources appears to be the most practical solution. When we contemplate the fact that next year will demand an equal if not a much larger supply of labor, since the draft will then be in full operation, it will be necessary in many states to devise more satisfactory schemes for securing and distributing labor.

In Maryland more than 100 city families were placed on farms this season by advertising in the Baltimore papers for skilled farm labor. The Farm Labor Bureau of Baltimore¹⁰ has perfected an organization whereby groups of five or six men will be sent out to a similar group of farmers who agree to use the labor coöperatively. These laborers board themselves. This plan will surely work where the farms are small and much diversified.¹¹

⁹ Letter under date of August 17, 1917.

¹⁰ Letter from T. B. Symonds, Director of Agricultural Extension, Maryland State College of Agriculture, under date of August 3, 1917.

¹¹ A new feature of the labor problem comes to the front in the Compulsory Work Act which was recently enacted by the Maryland legislature. This provides that all able-bodied men between the ages of twenty and fifty not otherwise employed shall be compelled by the state to work on the farm or on the public roads. How much this will aid in settling the labor shortage remains to be seen. There is no doubt that there is an immense amount of labor that is idle most of the time. In many small towns, negroes taking advantage of the high wages, work only two or three days a week. Wages for two days will keep the colored man for a week and in this way he puts in very little time at productive labor.

The whole question of labor, as one inquires into the facts, is not so much the shortage as the distribution and the idle. It has been suggested that all labor be conscripted by the government. This may be necessary for the country to realize its resources to the full extent. The group system of engaging labor as undertaken in Maryland has much to recommend it, especially in regions of small farms. Six to ten farmers agree to take so many laborers and employ them through the season. The number of men employed by the individual farmer at a given time will depend on the pressure of work. In this way the group of laborers can be employed continually without losing time in seeking new employment, and at the same time furnishing all the help the farmers may need. The boys' camp project has met with success in various quarters. A boys' camp was established near Indianapolis through the efforts of the Columbia Conserve Company of that place which is reported as doing very efficient work in the intensive crop area. It would appear that much of the field work near the canneries might be done by this method.

The effort of the various agencies to secure labor for farmers has on the whole met with fairly satisfactory results. The reports from various states indicate that thus far few crops have gone to waste owing to lack of labor. The farm labor problem is a complex one. Labor for the farm may be divided into three classes: 1. For general farm work through the entire season. These men must be qualified to handle teams and complicated machinery. These farms constitute 90 per cent of agricultural operations and are often large and widely distributed. 2. For the harvesting of small fruit, peach and apple crops. This labor is required for intervals of several days or weeks and is largely done by the piece. The cropping districts are more or less united offering easy distribution of labor. 3. For day labor in harvesting hay, small grain and corn.

For the general farm, experienced help is necessary as livestock and machinery must be handled. For the fruit farms the bulk of the labor need not be experienced. The day labor for emergency work is the most difficult to secure because it must be more or less skilled in farm operations. Much of the labor sent from the city is not worth the wages asked. It is not adjustable to farm conditions for two reasons: 1, they are not experienced in farm

operations; 2, they are used to shorter hours and to higher wages in the city. If the farmer is to be encouraged to large production he must have competent labor in order to profit under the present wages. It is the extra help in the harvest that is the serious problem. The problem is to effect a distribution of labor in such a manner that the laborer will not lose time.

On the other hand the farmer will need to plan his farming operations with the view of avoiding congesting the work at irregular intervals. The supreme test of good farm management is the distribution of labor throughout the year so as to keep the men profitably employed. Slack work at one period of the year followed by a rush requiring extra help complicates the labor situation on the farm. A better planned rotation of crops, with sufficient livestock to give productive employment during the winter, will enable the farmer to keep his help the year round. A better distribution of the labor on the farm together with the adoption of larger units of machinery will enable the farmer to handle more acres with fewer men. The substitution of three- and four-horse teams for two-horse teams will lessen the number of men required. This implies the outlay of more money for equipment. All farm machinery has practically doubled in price since the war. This brings up the subject of credit for the farmer.

CREDIT

The present crisis has shown that the farmer was in need of credit in many instances when he enlarged his production of crops. The advance in wages and in the cost of machinery, fertilizer, lime and seeds had increased his annual budget of expenses to such an extent that the farmer could not meet them. The problem was how to meet this demand and supply the farmer with the necessary credit. This was considered in most instances a local problem, and it was also held in most instances that the banks in the rural communities would be able to extend to the farmer the proper credit facilities. This plan should prove the best one for obvious reasons. The farmer is generally well known to the local banker and the institution is in a position to judge whether the applicant for a loan is worthy or not. In a few states money has been advanced in a large way to finance the farmer. Reports indicate that they have been able to get all the credit they needed from the local banks. In

the state of New York there was formed by a number of wealthy men what is known as the Patriotic Farmer's Fund. This organization coöperated with the State Grange and other farmer's organizations in placing small sums among the farmers to buy seed and fertilizers. The trustees of the Patriotic Farmer's Fund include a number of well-known and wealthy public-spirited citizens who early in the year placed at the disposal of farmers of the state a large sum of money to be loaned to them at 4½ per cent interest on notes payable December 1. Several million dollars were available, no limit being placed on the amount. The State Grange was asked to name a loan committee in each county to pass upon the character and reliability of the applicants for loans from this fund. If the report of the committee was satisfactory the applicant was able to secure the needed money at a nearby bank which had been designated as a depository by the trustees of the fund. None of the money passed through the hands of the state commission in any way, its work being to act as a general clearing house for information and assistance. The loans from the Patriotic Farmer's Fund up to June 1 were limited to \$150 to each individual for the specific purpose of buying seed and fertilizer. After June 1 the loans were available in sums of \$150 each to pay labor required in caring for and harvesting farm crops. The limit of money available to any one borrower was \$500. Mr. Loomis,¹² the State Commissioner, states that up to August 6 about \$300,000 has been loaned from this fund under the operation of the above outlined plan.

Supplementing this special effort to aid in agricultural credit, some work has been done in coöperation with the New York State Bankers' Association seeking to arouse increased interest in farm loans and to awaken the bankers generally to the great importance of this work.

Massachusetts¹³ did not give any direct aid to farmers in the way of credit, but the committee on public safety took up this question with the banks, urging them to extend credit to farmers wherever possible. Several of the banks have opened special farm de-

¹² Letter from A. M. Loomis, Commissioner in charge of Loans and Farm Funds, New York State Food Supply Commission, under date of August 6, 1917.

¹³ Letter from Wilfred Wheeler, Secretary, State Board of Agriculture of Massachusetts under date of August 6, 1917.

partments and employed men whose business it is to investigate the application of farmers for credit.¹⁴

Mr. J. F. Jones, Director of Agricultural Extension of Virginia, states that the bankers of that state have been most loyal in supporting farmers in their efforts to increase the production of food-stuffs. Many thousands of dollars have been loaned to farmers who were only good moral risks. In a number of counties the banks pooled their money and loaned it to farmers who were recommended by the county demonstration agent or by disinterested reliable farmers. In many instances, large quantities of seed were purchased through the efforts of bankers, county agents and chambers of commerce, and sold to farmers at cost.

It is yet too early to predict what method of securing credit will prove most satisfactory. It would seem that the local bank is in the position to render the greatest financial assistance to the farmer in short-time loans. The Federal Farm Loan Bank enables the farmer to secure long-time loans on first mortgage on his land but does not aid him in securing funds for temporary use. Many small banks find it difficult to find loans for their accumulated deposits, and, instead of lending money on paper recommended, but not guaranteed, by the larger financial centers, they might place their funds just as safely in their immediate localities, to the mutual advantage of all concerned in the community. These problems will not be solved except by coöperation and this is one of the lessons that is being learned in this crisis.

¹⁴ The Plymouth Trust Company of Brockton has for two years employed two men, graduates of the Massachusetts Agricultural College, to aid the farmer in applying business methods to the business of farming. The object of the directors of the institution was to get acquainted with them so as to make a business-like application of credits to those engaged in this important industry. This bank has helped the farmers of their vicinity to buy seed, livestock, etc., and stimulated production by offering prizes to the young people on the farm. It is showing the farmer how to keep cost accounts and how to make out statements; in short, to know his business, both from the technical and from the business standpoint. To worthy persons they stand ready to make a small loan to be used for construction work or for improvements, under the supervision of the bank's field agents. Every banker will ask himself, Does it pay? It has cost the Plymouth County Trust Company about \$4,000 a year net to supply this service to farmers in and about Brockton, but as a result of this and similar activities, the deposits have increased in the past five years from \$400,000 to over \$3,000,000.

Another method aiding the farmer is illustrated by the work of the State Food Supply Commission of the state of New York.¹⁵ Realizing the shortage of farm labor in their section the commission purchased forty tractors to be loaned to the various communities. The tractor was not hired to an individual. The community was given the option of purchasing the tractor at the end of the season, the rental being deducted from the purchase price. The charges for the tractors were the actual estimated depreciation. The cost per acre varied from \$1.50 to \$.55 per acre. In order to supply sufficient technical aid in operating the tractors the commission employed an expert from the Department of Rural Engineering at the State College of Agriculture. This method of aiding the farmer in getting more labor should be fairly satisfactory although much will depend upon the coöperation of the various farmers. The tractors were loaned to the County Farm Bureau Association and the County Home Defense Committee and other responsible farm organizations. The state commission depends upon its county representative to satisfy himself that the conditions of the contract are fulfilled.

In the state of Virginia the farmer is aided in securing lime by the state which operates the grinding plants and furnishes the farmer with the ground lime stone at cost. At present the ground lime stone costs the farmer \$1.00 per ton on board cars.

The agricultural survey inaugurated by many states at the beginning of this year has revealed some interesting facts. It has shown that many farms are not properly organized from the standpoint of farm management. For instance, in Delaware it was found that many farmers carried one-fourth to one-third more horses than were needed to carry on the work satisfactorily. In fact, there were far more horses than hogs on the average Delaware farm. The number of horses might easily be reduced if larger units of machinery were employed. Larger horses were also needed as a rule. In many cases four-horse teams might be employed in place of so many two-horse teams, thus saving man labor. Larger units of horse power and machinery would lessen the necessity of keeping so many men on the farm. The survey in Delaware showed that farmers often asked for additional help when they already had more men on the place than could be economically used with their type

¹⁵ Bulletin No. 3. New York State Food Supply Commission, July 9, 1917.

of farming. There is some waste of labor on farms as well as elsewhere. In New York it was found that the farmers were keeping 8,000 head of horses above their requirements. When it is considered that it costs \$100 per year to keep a work horse it will be seen that there is a clear waste of \$800,000 to the farmers of the state. The farm management surveys conducted in the various states during the past few years show that in the East fewer acres are cultivated per horse and man than in the Middle West. The difference in the amount of land operated per man is much greater than the natural differences of soil and climate would indicate.

The final solution of the problems of labor and credit have not been reached by the activities of the last few months. There are many phases of the problem upon which we need more experimental evidence. However, there are a few facts which seem fairly clear.

1. That there is a shortage of labor on the farm. The indications are that this shortage will be more acute in 1918 than at present, owing to the withdrawal of drafted men.

2. That the country as a whole does not suffer so much from a lack of labor as from a poor distribution of labor.

3. That organization is necessary in order to bring about the localization and distribution of labor. The state appears to be the best unit for accomplishing this end.

4. That the industries and the farm must coöperate if labor is to be used economically. Farmers particularly must coöperate in order to secure help of the proper kind.

5. That most farmers have facilities for short-time loans at their local banks. Greater business coöperation of bankers and farmers is much needed.

THE NECESSITY FOR GOVERNMENT REGULATION OF PRICES IN WAR TIME

BY CHARLES R. VAN HISE,

President, University of Wisconsin, Madison.

As showing the effect of the war conditions upon prices there are here introduced two tables prepared by the Bureau of Labor Statistics showing the average wholesale prices of twenty-six important commodities and the average retail prices of eighteen foods for the month of July during the years 1914, 1915 and 1916, and for each of the first six months of the year 1917 during which time the advance in prices has been most rapid.

For a number of years, indeed since 1897, there has been a steady upward tendency for prices, the cumulative effect of which was large. However, the outbreak of the war, because of the unsettled commercial conditions, had the immediate effect of generally staying advancing prices and depressing some; and the permanent tendency for rising prices did not fully assert itself until nearly a year later; and, even then, the advances for most commodities were rather small. Notable exceptions to this statement were wheat and flour, the prices of which promptly advanced.

By July, 1915, the upward swing had everywhere established itself, the wholesale prices of nearly all of the commodities listed being higher than in July, 1914, and some of them twice as high. The wholesale prices in June, 1916, as compared with those of 1914 show that the most important commodities were from 50 to 400 per cent higher than in 1914.

For the more important commodities the wholesale prices of June, 1916, as compared with July, 1914, just before the outbreak of the war were roughly as follows:

- Meat animals and meat, 25 to 75 per cent higher;
- Wheat and flour, more than $2\frac{1}{2}$ times as much;
- Corn and cornmeal, more than double;
- Potatoes, more than $2\frac{1}{4}$ times as much;
- Sugar, more than double;
- Cotton and cotton yarns, a little less than twofold;

WHOLESALE PRICES OF IMPORTANT COMMODITIES, JULY, 1914-1916 AND JANUARY-JUNE, 1917

Article	Unit	Actual Prices, July						Average monthly price, 1917					
		1914	1915	1916	January	February	March	April	May	June	June	June	June
Cattle, good to choice steers	100 lbs.	\$9.219	\$9.213	\$9.985	\$10.530	\$11.131	\$11.869	\$12.310	\$12.475	\$12.550			
Beef, fresh, native steers	Lb.	.135	.132	.141	.138	.141	.149	.160	.160	.162			
Beef, salt, mess	Bbl.	17.250	17.500	18.250	23.250	23.250	24.313	26.250	29.600	30.500			
Hogs, heavy	100 lbs.	8.769	7.281	9.825	10.955	12.575	14.794	15.795	16.088	15.706			
Bacon, short clear sides	Lb.	.141	.111	.157	.165	.175	.196	.218	.242	.242			
Pork, salt, mess	Bbl.	23.625	18.500	27.167	32.250	33.250	35.538	39.000	41.450	41.500			
Lard, prime, contract	Lb.	.102	.081	.131	.161	.172	.200	.213	.225	.212			
Wheat, No. 1, northern	Bu.	.897	1.390	1.170	1.917	1.808	1.984	2.381	2.981	2.694			
Flour, standard patent	Bbl.	4.594	7.031	6.100	9.215	9.069	9.631	11.619	14.880	13.894			
Corn, No. 2, mixed	Bu.	.710	.783	.808	.982	1.016	1.123	1.397	1.625	1.716			
Meal, fine, yellow	100 lbs.	1.425	1.725	1.900	2.650	2.750	2.750	3.100	3.700	3.900			
Potatoes, white	Bu.	1.206	.444	.863	1.795	2.469	2.275	2.669	2.705	2.950			
Sugar, granulated	Lb.	.042	.058	.075	.066	.069	.071	.082	.079	.075			
Hides, packers'	Lb.	.194	.258	.270	.355	.318	.305	.305	.315	.330			
Cotton, upland, middling	Lb.	.131	.092	.130	.176	.163	.186	.203	.208	.255			
Cotton, yarn, carded 10/1	Lb.	.215	.160	.253	.340	.320	.310	.360	.365	.375			
Wool, fine fleece, scoured	Lb.	.575	.652	.761	1.000	1.087	1.130	1.152	1.304	1.348			
Worsted yarn, 2-32s	Lb.	.650	.850	1.100	1.250	1.250	1.270	1.300	1.400	1.550			
Coal, bituminous	2,000 lbs.	2.200	2.200	2.200	4.500	5.000	5.000	5.000	6.000	6.000			
Copper, electrolytic	Lb.	.134	.199	.265	.295	.330	.363	.340	.310	.325			
Pig lead	Lb.	.039	.058	.069	.075	.085	.095	.094	.099	.115			
Pig tin	Lb.	.311	.391	.389	.430	.490	.515	.543	.585	.630			
Pig iron, Bessemer	2,240 lbs.	14.900	14.950	21.950	35.950	35.950	37.700	42.200	45.150	54.700			
Steel billets	2,240 lbs.	19.000	21.380	41.000	63.000	65.000	66.250	73.750	86.000	98.750			
Spelter	Lb.	.051	.220	.113	.098	.099	.109	.108	.095	.096			
Petroleum, crude	Bbl.	1.750	1.350	2.600	2.850	3.050	3.050	3.050	3.100	3.100			

AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN THE UNITED STATES, JULY, 1914-1916 AND JANUARY-JUNE, 1917

Article	Unit	1914	July 1915	1916	January 1917	February 1917	March 1917	April 1917	May 1917	June 1917
Sirloin steak	Lb.	\$0.270	\$0.265	\$0.287	\$0.276	\$0.287	\$0.295	\$0.317	\$0.322	\$0.328
Round steak	Lb.	.245	.240	.260	.247	.260	.267	.289	.296	.301
Rib roast	Lb.	.208	.206	.220	.216	.225	.233	.252	.257	.261
Chuck roast	Lb.	.175	.167	.179	.174	.186	.193	.212	.218	.222
Plate beef	Lb.	.127	.123	.132	.132	.141	.146	.161	.166	.170
Pork chops	Lb.	.222	.211	.234	.236	.261	.279	.306	.306	.309
Bacon	Lb.	.273	.270	.290	.296	.307	.333	.382	.416	.425
Ham	Lb.	.279	.265	.323	.306	.318	.338	.365	.388	.391
Lard	Lb.	.154	.145	.208	.214	.219	.238	.264	.278	.280
Hens	Lb.	.219	.208	.241	.255	.267	.276	.290	.293	.288
Eggs	Doz.	.300	.278	.319	.344	.306	.349	.386	.398	.409
Butter	Lb.	.343	.343	.355	.453	.469	.461	.508	.465	.469
Milk	Qt.	.088	.087	.088	.099	.100	.100	.102	.105	.106
Bread	16 oz. loaf*	.055	.063	.062	.070	.071	.072	.075	.085	.085
Flour	‡ bbl. bag	.787	1.003	.927	1.369	1.369	1.401	1.649	2.134	1.973
Cornmeal	Lb.	.031	.033	.033	.040	.041	.041	.047	.054	.055
Potatoes	Peck	.405	.223	.352	.587	.761	.778	.887	.919	.960
Sugar	Lb.	.052	.070	.087	.080	.081	.087	.096	.100	.093

* 16 oz., weight of dough.

Wool and worsted, more than twofold;
 Bituminous coal, more than $2\frac{1}{2}$ times as much;
 Copper, more than $2\frac{1}{2}$ times as much;
 Pig lead, nearly fourfold;
 Pig iron, more than threefold;
 Steel billets, more than fourfold;
 Spelter, nearly double;
 Petroleum, almost double.

Retail prices of the foods given in the second table show advances corresponding to the wholesale rates.

The facts presented show that for the essential commodities of food and clothing, coal and the metals and their manufactured products, the prices have greatly advanced during the past two years, and the prices given for June, 1917 are not maximum prices. Since that month prices have continued to advance. This is illustrated by the price for cotton and hogs, which since that time have made record prices.

In order to gauge the changes during the past year there are here inserted the prices of some of the more important commodities for August 1, 1917, as compared with August 1, 1916:

<i>Crop</i>		1916	1917
		<i>in cents</i>	<i>in cents</i>
Wheat	Per bushel	107.1	228.9
Corn	Per bushel	79.4	196.6
Barley	Per bushel	59.3	114.5
Rye	Per bushel	83.4	178.1
White potatoes	Per bushel	95.4	170.8
Cotton	Per pound	12.6	24.3

For each of these important commodities the prices within the year, with the single exception of white potatoes, have more than doubled. These are indeed amazing advances in prices. The advances must not only stop, but there must be recession in the prices of necessities to reasonable amounts.

The unexampled prices of all commodities have placed a heavy burden upon the consumer and especially the consumers who are on a monthly salary or a day wage, and these constitute the great proportion of the population. It is true that there have been advances in wages, in some cases several advances, but these together seldom amount to more than 25 or at most 50 per cent; and therefore they are not at all in proportion to the increased

cost of living. Since the exaggerated prices have imposed hardship upon all people of moderate means, the situation has aroused general alarm. Serious trouble is likely to confront us the coming winter unless relief is obtained. If the war is to be won, economic conditions must be made such that those who have a small income will be treated justly.

THE CAUSES OF MOUNTING PRICES

One fundamental cause of the mounting prices is the unusual and extraordinary demand from abroad for all essential commodities. However, this has only been one factor in the process.

When it was once appreciated that there was a relative shortage of the essential commodities, the home purchasers, instead of buying ordinary amounts, purchased in advance of their needs. Thus the family, instead of buying flour by the sack bought a number of barrels. The same is true in regard to sugar. Similarly during the spring and summer of 1917, when it was appreciated that there was a shortage in coal, many manufacturers were trying to protect their businesses by accumulating reserves to carry them through the winter. The same was true of those who desired coal for heat. The consequence was that the demand of purchasers was far beyond what would have been necessary to meet actual needs had the ordinary procedure been followed. This frenzy of excessive buying has greatly aggravated the situation.

Another most important cause of the enhancing prices was that a time when there is great demand is especially advantageous for speculators to accumulate great stores of goods of various kinds and hold them for advances in prices. This was done on a great scale throughout the country for every essential commodity.

In the space allowed it is not practicable to summarize and discuss the measures which the government has taken to control prices and profits. The most important of these measures is the so-called Food Production Act, which gives very large powers in regard to control of prices, not only for all foods but for fuel. This law is supplemented by other laws. The enforcement of the Food Production law has been placed in the hands of food and fuel administrators, and also the principles which have been applied in regard to the control of prices of food and fuel have been extended by agreement to other important commodities, notably steel and

iron. In short, under war conditions, we have abandoned the principles that the laws of supply and demand and competition are adequate to the control prices of commodities, and we are depending primarily upon governmental regulation.

Finally, when the conditions are as above, it is especially easy for those in a given line of business at a particular locality to cooperate to push prices upward and thus greatly increase the profits of their business. This also was done on a vast scale for many commodities.

Based upon the first factor, the second, third, and fourth factors have come in each with reinforcing power to accelerate prices. The tendencies above described, once started, are cumulative; and the enhancement of prices goes on with increasing velocity. The prices of foods are advanced; the employees must have higher pay because of the increased cost of food; the raw materials for manufactured articles are advanced; the manufacturer charges a higher price for his articles because he must pay more for his labor and an increased price for his raw materials. At each stage the advance of prices is made more than sufficient to cover the additional cost. The cycle thus completed is begun again with food, and the circle once more gone around. The second cycle completed, the conditions are right for a third cycle, and so on indefinitely with the result that prices have been and still are rising beyond all reason, like a spiral ascending to the sky.

FAILURE OF LAW OF SUPPLY AND DEMAND AND COMPETITION

The facts which have been presented show that the law of supply and demand and competition adequately to control prices has broken down, for the simple reason that for every staple commodity the demand is greater than the supply. In normal years before the war the potential capacity of the United States for almost every essential commodity was greater than the home demand. The agricultural lands were developed so as to produce a large surplus, all that could be marketed at home and abroad at a reasonable price. The coal mines were so developed that they could produce many million tons more than the market demanded. Steel and iron mills similarly were developed so as to meet not only the ordinary demand, but to respond quickly to exceptional demands. Under these circumstances the prices, if not

adequately controlled, had been largely controlled by supply and demand, except where there had been coöperation of purchasers or manipulators or both, to control the market.

THE EXCESS DEMAND

The situation was wholly changed by the world war. For every important commodity the demand exceeds the supply. For the staple foods the demand is greater than any possible supply. For coal the demand exceeds the capacity for delivery. For steel the demand is far beyond the capacity of all mills.

It is not possible to give average percentages of the extent to which the demand exceeds the supply; but it is safe to say that the percentage upon the average would not be large, probably not more than 20 per cent, and for scarcely any commodity more than 30 or 40 per cent. However, this moderate excess demand of say 20 per cent, taken in connection with buying in advance of needs, of forestalling by speculators and combinations to control the market, has been sufficient to increase the prices of many essential commodities by 100, 200, 300, and even 400 per cent, and for certain articles by greater amounts. There is no reason to suppose that the excess demand will decrease in the near future; indeed it is probable that for the coming year it will increase.

Notwithstanding the extraordinary efforts to increase production which our entrance in the war has created, vast new requirements for war equipment of all kinds, including foods, textiles, leather, metals for guns, munitions, etc., have kept the demand beyond the supply. At the same time this demand is created, there are taken from active production in this country more than a million men.

The allies probably have 20,000,000 men in the field and 20,000,000 more that are directly connected with producing munitions and materials for war consumption. Fertilizers have been lacking. In consequence of these facts and despite the most earnest and successful efforts of the British and French to greatly increase their acreage crops, especially wheat, their crops are certainly wholly inadequate to feed the people of these countries; for under normal conditions, hundreds of millions of bushels of grain and vast quantities of meats have been imported from the United States by England and France and smaller amounts by Italy.

THE NECESSITIES OF THE ALLIES MUST BE MET

It is just as imperative that we furnish the allies with the necessary foods, munitions and railroad equipment, as it is that we supply our own armies. Their armies are doing precisely the work that the United States Army is doing, only on a vastly larger scale. The sacrifices of the British, French and Italians have been immeasurably greater than our own; therefore it is but a small thing to insure their securing the commodities that are essential to carry the war to a successful conclusion.

ENORMOUS EXCESS PROFITS

Under the conditions described above, it is inevitable that the profits of the great corporations dealing in the essential commodities should be excessive. There has been nothing comparable to the profits of the present war in the history of civilization. In the United States, the most exploitive profiteering of the days of the Civil War was trivial as compared with the enormous sums which have been obtained during the present war by the great corporations dealing in the essential commodities.

By "excess profits" is meant the amount which the profits of the war times exceed those of normal times before the war.

Cereals. There are no available figures showing the amount of the excess profits for those producing and handling the cereals for the war period as compared with the conditions before the war. To obtain accurate figures in this matter is exceedingly difficult because the profits are distributed among the producers of grain, dealers, millers, jobbers and retailers. Mr. Herbert Hoover in a statement before the Senate committee on agriculture, June 19, 1917, stated that "in the last five months on the item of flour alone \$250,000,000 has been extracted from the American consumer in excess of the normal profits of manufacturers and distributors." If this statement is correct, the total excess profits made upon the grains during the last year must amount to more than a billion dollars and may have reached two billion dollars.

Meats. According to figures presented by one of the treasury experts to the finance committee of the Senate, the profits of 1916, as compared with 1914 and the excess profits of four big packing companies of Chicago were as follows:

<i>Corporation</i>	<i>1914</i>	<i>1916</i>	<i>Amounts of increase of war profits</i>
Armour and Company	\$7,509,908	\$20,100,000	\$12,590,092
Swift and Company	9,450,000	20,465,000	11,015,000
Morris and Company	2,205,672	3,832,213	1,626,541
Wilson and Company	1,511,528*	4,913,873	3,402,345
	<hr/> \$20,677,108	<hr/> \$49,311,086	<hr/> \$28,633,978

It should be understood, however, that the excess profits of \$28,633,978 are not exclusively from meats, for the reason that these packing companies are engaged in allied industries and an unknown portion of them are from other sources than meat.

Metals. In regard to the excess profits in metals, Senator Simmons on August 10, 1917, presented to the Senate figures compiled by J. P. Morgan and Company showing the excess profits for 1916 as compared with 1914 of some of the larger metal manufactures as follows:

United States Steel Corporation	\$207,945,000
Bethlehem Steel Company	53,715,000
Anaconda Copper Mining Company	39,087,000
General Electric Company	6,523,000
American Smelting and Refining Co.	11,158,000
Total for the five corporations	<hr/> \$318,428,000

Petroleum. In regard to the excess profits of petroleum, these for 1916 are stated, on the same authority, to be for the Standard Oil Company of New York \$20,425,000.

Manufactured Commodities. The excess profits of manufactured products other than the metals have been similarly large. From the same authority the excess profits of the duPont Powder Company for 1916 are placed at \$76,581,000; for the Corn Products Company at \$3,798,000; and for the United States Rubber Company at \$4,537,000.

Forty-eight Corporations. It is also stated that the excess profits of forty-eight corporations which include the above mentioned with others for 1916 as compared with 1914 amounted to \$659,858,490.

Coal. No figures are available which will show the excess profits of the miners of coal for 1916 and 1917 as compared with

*15 months.

years antecedent to the war. However, the enhancement of prices from two to fourfold makes it certain that these profits for the entire United States in the fiscal year 1916-1917 amounted to hundreds of millions of dollars, possibly to a billion dollars or more.

Transportation. The general increase in profits has also been shared by transportation. Senator Simmons in the report mentioned gives the excess profits of the Pennsylvania Railway Company for 1916 as compared with 1914 as \$11,741,000, and for the "Big Four," \$5,843,000.

Wood. The foregoing statements have not included the wood industries but if they had been included, we should have had similar facts in regard to the enormous increase in production, increased exportation and greatly enhanced prices for the wood products; indeed the enhancement of prices has been so great in the case of paper and the situation so acute, that the Federal Trade Commission has stated that the production of paper, both for print and book, "is vested with a public interest."

The Federal Trade Commission in a letter dated June 13, 1917 to the president of the Senate, recommended governmental control of the production of print and book paper. The letter stated if in 1917 the same tonnage is produced as in 1916 at the price prevailing in June, the 1917 output would cost \$105,000,000 whereas the cost of this amount in 1916 was \$70,000,000. It said further that at least 50 per cent of this increase of \$35,000,000 would be excess profits over those of 1916, the prices for print and book paper being from 65 to 84 per cent higher than in 1915. The average profits of forty-one of the book making paper mills for 1916 were 100 per cent more than for the previous year.

The situation was regarded as so serious that the commission recommended as a war emergency measure that all mills and agencies in the United States producing and distributing print paper and mechanical and chemical pulp be operated by the government through suitable agencies, and that the products be equitably distributed at fair prices. It was also recommended that because so much of the newspaper print paper comes from Canada to the United States that the government of Canada be asked to create agencies to act jointly with similar agencies from the United States for the protection of consumers; and that in case the Canadian government would not join in the enterprise that the exportation of

paper and paper material into the United States should be made only on government account through the federal agency recommended by the commission.

Other Industries. A full discussion of the industrial situation would show advances in prices and increased war profits in the production of scores of finished commodities other than those already considered, whether the material be foods, meats, metals or wood, or some combination of one or more of these.

CONCLUSION REGARDING EXCESS PROFITS

The foregoing facts show that war conditions have been taken advantage of by corporations generally throughout the United States to exact excessive profits. Indeed in many cases the demands for commodities have been so pressing and the enhanced prices so great as to make the exactions amount to extortion. When prices for essentials are increased two, three or fourfold and result in profits beyond the dreams of any imagination before the war, it cannot be said that the appeal of President Wilson to have men in business and industry on patriotic grounds not to practice profiteering has led to any substantial results. Nor can it reasonably be expected that such an appeal would have been successful. When all lines of business are following the same practice, it cannot be expected that one corporation or one business man shall depart from the practices of the others.

FURTHER ATTEMPTS TO CONTROL BY INDICTMENT

As before the war there have been attempts to prevent co-operation and thus control prices and profits through prosecution under the Sherman Act. Thus on May 24, 1917, by the federal grand jury at Boston eighty-eight dealers were indicted for violating the anti-trust law to control the entire crop of onions to enhance the prices of that product. On June 2 the federal grand jury at Chicago brought indictment against twenty-five individuals and firms acting on the Chicago Butter and Egg Board, who were charged with manipulating the markets to increase the price of eggs. In New York it was announced June 19, that fifty-one coal operators and one hundred and two corporations were put on trial before the United States district court for violating the Sherman Anti-trust Act by combining to increase and fix the price of certain coals. Other indictments have been made along the same line.

Some of the prosecutions, notably that relating to coal, have been abandoned; others have been continued. However, whether the prosecutions are few or more, are abandoned or continued, they have been utterly futile to prevent general coöperation to control the market and thus enhance prices for all essential commodities. The failure in these respects has been just as complete as was failure along similar lines before the world war.

The facts presented in the foregoing pages demonstrate beyond doubt that we cannot rely upon the laws of supply and demand and competition to meet the situation under war conditions. The only possible way in which prices and profits can be reduced to reasonable amounts is by governmental action.

FOOD PRICES VS. WAGE INCREASES

A STUDY AS TO THE TREND OF REAL WAGES IN PHILADELPHIA

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AND

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EDITOR'S NOTE

Immediately after the food riots in the streets of Philadelphia last winter, Mayor Smith appointed a Food Inquiry Committee to investigate the situation. One of the many problems that presented itself to this committee was the determination of the trend in food prices as compared with the trend in wages to ascertain whether there were substantial reasons for discontent. Mr. Raymond T. Bye was asked to undertake a study of the trend of food prices and Dr. Charles Reitell a similar study of the trend in wages. With the consent of the city authorities the Editor has secured the results of these two investigations for publication in *THE ANNALS*. The two articles which follow thus constitute a joint investigation intended to determine the movement of real wages in Philadelphia over the period from January 1, 1916 to March 10, 1917.

THE TREND IN FOOD PRICES

RAYMOND T. BYE, A.M.

It needs no elaborate array of statistical data to inform the American housewife of the trend in food prices. From the growing slimness of her marketing purse she knows, and her husband knows, that the trend is upward. To understand the real significance of this movement, however, it is necessary to measure the exact rate of the increase in prices, in order that this increase may be compared with the changes in wages. If money wages are rising as fast as prices, the worker's real income is as large as before and the increase of prices is of no real significance; but if wages are rising less rapidly than prices the standard of living of the workers is falling and we are face to face with a deteriorating society. It is the purpose of the present article to state precisely what the recent trend of prices in Philadelphia has been. The figures may then serve as a basis for comparison with the wage statistics given by Dr. Reitell in the latter part of this article.

When this study was undertaken for the Mayor's Committee on Food Prices it soon became apparent that it would be very difficult, if not impossible, to trace for very many months back the changes in retail prices, owing to the fact that the dealers themselves do not keep a record of their own past prices. The United States Bureau of Labor Statistics, however, has for some years been receiving retail food price quotations from certain representative stores in various cities, and it very courteously consented to the use of its Philadelphia quotations for this study. Upon them most of the charts and tables used here are based. Through the coöperation of the Philadelphia Society for Organizing Charity, which lent its district workers to the task, it was also possible to make a detailed study of the food prices in March, 1917 in some two hundred Philadelphia stores. The writer, therefore, cannot lay claim to a great deal of independent research in gathering the data for this article, but frankly acknowledges his indebtedness to the sources named. The study embraces the period from January, 1915 to August, 1917, inclusive.

While a gradual increase in food prices has been a normal phenomenon in this country over a long period of years, it is the extreme accentuation of this tendency within the past year that has caused

such general alarm and resulted in food riots. The changes in the price of twenty-two principal articles of food in Philadelphia, shown in Chart 1, makes this very clear. This chart shows the average price of twenty-two articles of food which have been selected by the United States Bureau of Labor Statistics as representing over two-thirds of the average family expenditure for food in this part of the country as determined by an actual study of family budgets.¹ The twenty-two articles of food on which the chart is based are as follows:

Sirloin steak	Butter
Round steak	Cheese
Rib roast	Milk
Chuck roast	Bread
Plate boiling beef	Flour
Pork chops	Rice
Bacon	Potatoes •
Ham	Sugar
Lard	Cornmeal
Hens	Coffee
Eggs	Tea

A simple average of the prices of these twenty-two articles would be inaccurate, for a change in the price of a commodity like flour or potatoes would have a far greater effect on the family budget than a corresponding change in the price of cheese. The food prices were therefore "weighted" by multiplying them with the average quantity of each article consumed in workingmen's families.² The curve is thus a graphic representation of this weighted average of price changes and fairly shows what may be termed the "effective" price changes for the period named instead of the simple average price changes. It accurately measures the increased drain on the family pocketbook, not allowing for any change in wages, occasioned by the recent movement of food prices.

The chart shows that while prices remained fairly constant throughout the year 1915, in 1916 they began slowly to rise, taking a sudden leap in August of that year, rising rapidly almost unchecked until June, 1917. Taking the average price of all articles for the year 1916 as 100, the relative price in June, 1917 was 145 as compared with 89 in June, 1915, an increase in two years of 63 per cent.

¹ U. S. Bureau of Labor Statistics, Annual Report, 1901..

² *Ibid.*

In one year the increase was 48 per cent. In August of the present year prices had somewhat declined, but were still 60 per cent higher than two years previously, the relative price being 141 as compared with 88. Moreover, the fact that prices were somewhat lower in August than in June is not to be taken as an indication that the

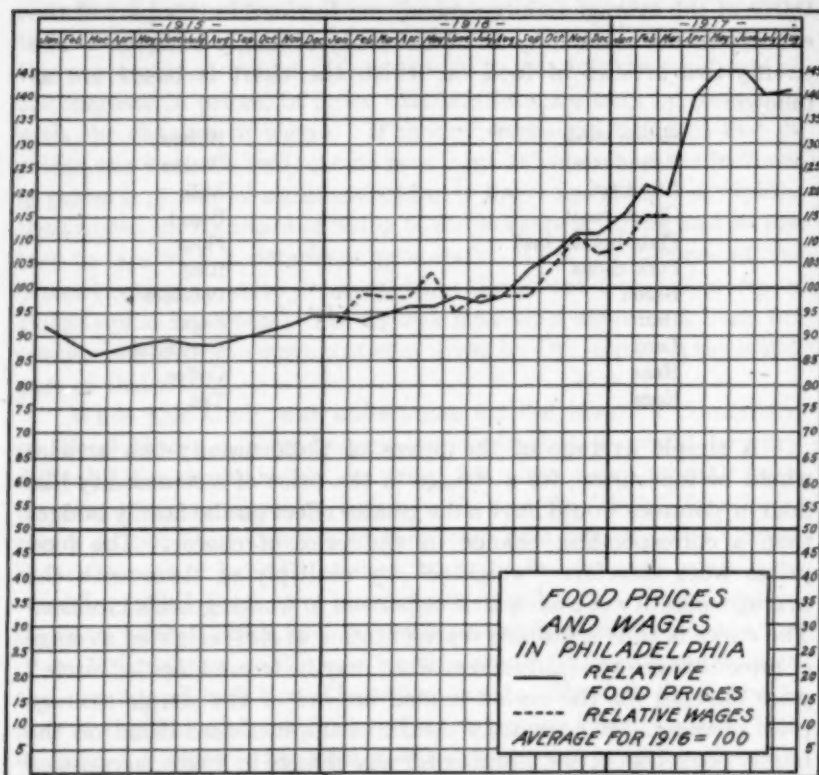


CHART I

crest of the wave has been reached, for in July and August of each year a slight fall in prices is a normal phenomenon, as shown by the chart, followed by a rise again in the fall. Indeed the curve shows that the low level for the present year was reached in June, when the relative price was 140, and that in August the rise had already set in again.

This price increase can be studied in greater detail in Table I,

page 244, which shows the relative prices of twenty-seven articles of food in Philadelphia, by months, from January, 1915 to August, 1917.

The first column, "22 Articles Combined," gives the weighted average relative prices of the twenty-two articles of food on which

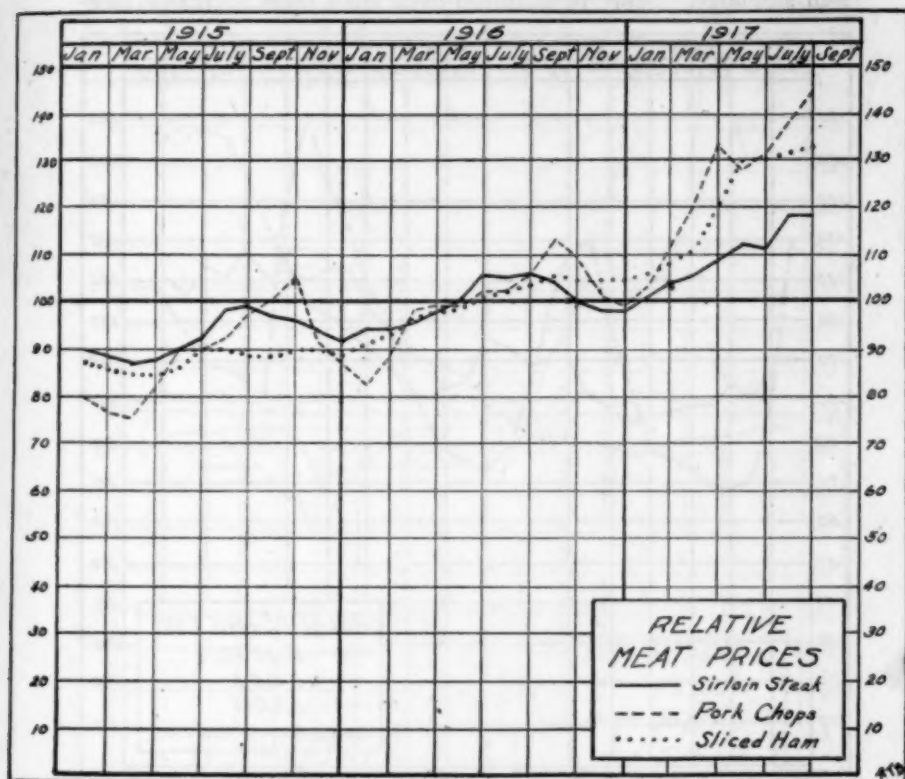


CHART II

Chart I is based. Charts II, III, IV, and V show in graphic form the relative prices of some of the more important articles included in the table. It will be noted that with the exception of a very few articles like coffee, tea and rice, practically all of the necessities of life went up markedly in price during the period covered by the figures. Meats of all kinds rose anywhere from 19 per cent to 51 per cent in two years. Butter and lard increased 52 and 109 per cent respec-

tively, while eggs in August of this year were 49 per cent higher than in August of 1915. Flour, a basic article of diet, took a tremendous leap in the latter months of 1916, fell somewhat in June and July but was on the upward trend in August again. Flour in May was 93 per cent higher than two years previously. Bread, of course, has risen similarly. More pronounced even than these increases, how-

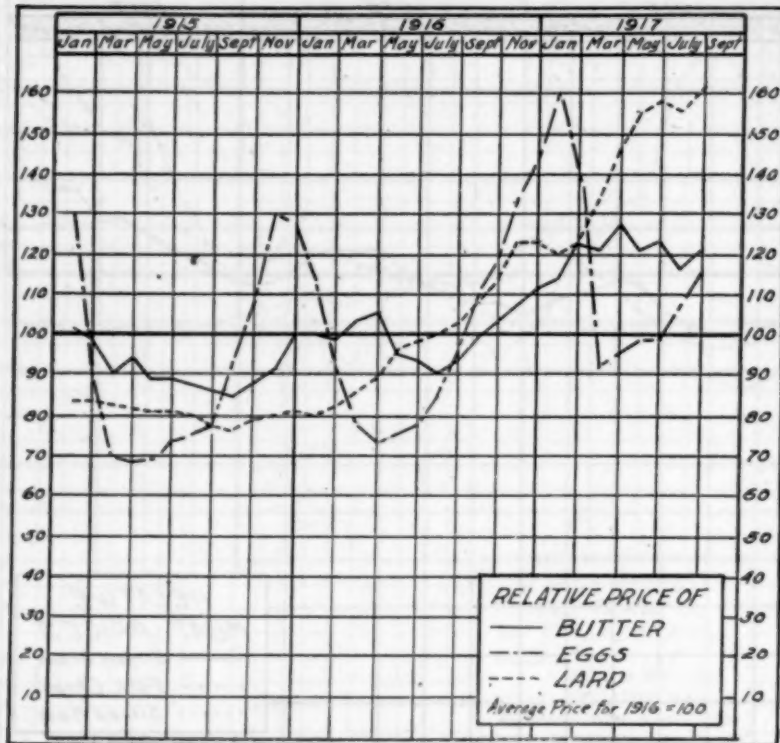


CHART III

ever, were those in potatoes and onions, which occurred last spring. Potatoes are an extremely important item to the masses and it is not to be wondered at that the high prices prevailing led to suffering and rioting. Potatoes in June of this year were 234 per cent higher than in June, 1915. Onions in April, 1917 had a relative price of 279 as compared with 64 two years previously, an increase of 336 per cent.

The price of the twenty-two articles mentioned above, multi-

plied by the average amount consumed by workingmen's families,³ represents, at the August, 1917 prices, an annual expenditure of \$566.31 per family. Assuming that this represents two-thirds of the

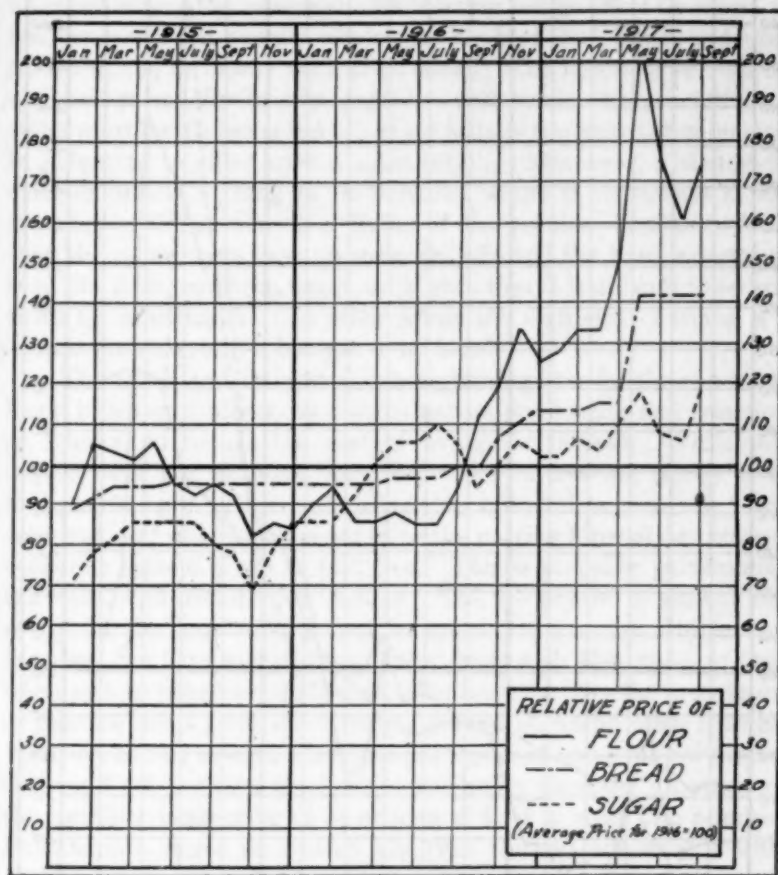


CHART IV

total expenditure for food, which is approximately correct, the annual expenditure per family for food at the August level of prices was about \$850. The corresponding figure at the August, 1915 prices was \$530, and at the August, 1916 prices, \$590. The annual

³ U. S. Bureau of Labor Statistics, Annual Report, 1901.

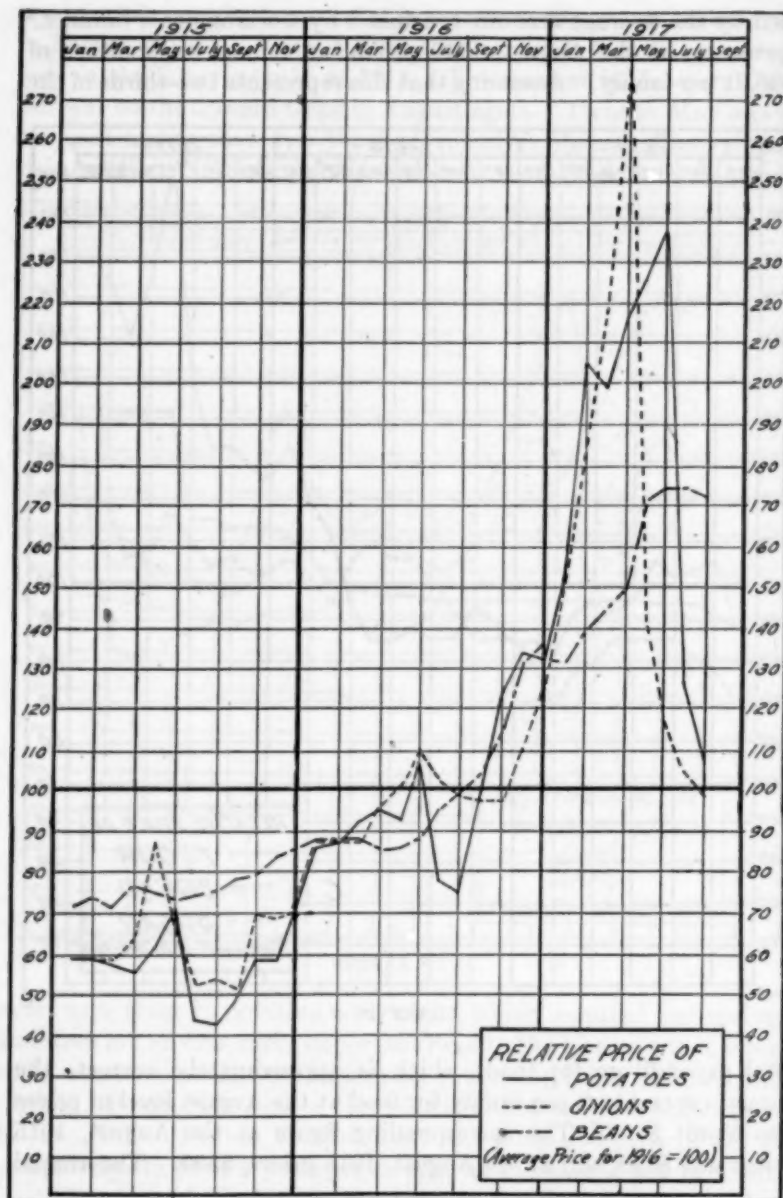


CHART V

cost per family for food is accordingly \$260 greater than it was one year ago and \$320 greater than it was two years ago. To a family of moderate income this means a serious financial strain. True, to a certain extent the increased cost of living can be offset by resort to less expensive but equally wholesome kinds of food, but it is doubtful if this can be of any very great effect. The habits of persons do not change readily in such matters, and those who are likely to suffer most by the increased prices are usually too ignorant or lacking in judgment to effect such a substitution. Moreover, a change to cheaper diet is a thing to be deplored where it represents a real lowering of the standards of living of the people. But aside from this, the rising costs have so seriously affected the basic articles of food like flour, potatoes, sugar, milk, etc., that it is difficult to escape them by substitution. In other words the high cost of living is a serious problem, and it has got to be faced.

The writer was interested in ascertaining how far the consumer has it in his own power, by discriminative purchasing and selection of dealers, to reduce the cost of living for himself. While this inquiry was not pursued very far, some interesting things were brought to light. It is well known to economists that the "free competition" which is assumed to be the moving force of our present economic system is not in fact free. This is probably particularly the case with retail food dealers. The housewife is guided not solely by her pocketbook, but in great measure by whims and caprices, her likes and dislikes. She deals with this store or that because it gives her social prestige, or because she likes the proprietor, or because she is given credit there, or for a thousand other reasons. Were she to buy always where she got the most value for her money she could get her food products considerably cheaper. A study of the simple average price of 38 articles of food in some two hundred Philadelphia stores on March 15, 1917 showed not only a wide variation between individual stores but between whole districts of the city. The relative prices ranged from 88 in the lowest district to 108 in the highest, a maximum difference of 23 per cent. There is a considerable difference, too, between the prices of the independent stores and the large scale chain dealers. In Philadelphia in March, 1917 the average prices of the four largest chain stores were 7 per cent lower than the average prices of two hundred independent stores. Were competition perfectly free the independent stores

TABLE I.—RELATIVE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN PHILADELPHIA, JANUARY, 1915 TO AUGUST, 1917—
(AVERAGE PRICE FOR 1916=100)

Month	Unit of measurement	22 Articles Combined	Strain Steak	Round Steak	Rib Roast	Chuck Roast	Plate Beef	Pork Chops	Bacon	Ham	Lard	Hens	Fresh Eggs	Butter	Cheese	Milk	Bread	Flour	Corn Meal	Rice	Potatoes	Sugar	Coffee	Tea	Salmon, canned	Onions	Beans, Navy	Peanut	Kashim	
1915	1915 Average price	89	93	93	90	92	93	88	93	88	81	89	93	92	91	98	94	94	93	99	57	81	100	100	100	63	76	101	101	
1916	1916 Average price																													
1917	1917 Average price	\$ 325	263	232	222	191	126	242	284	343	176	265	392	452	262	081	047	1 078	030	094	445	075	285	549	178	050	102	133	122	
January...		92	89	89	86	90	92	80	93	88	84	88	130	101	91	98	89	90	94	100	59	72	101	99	100	59	71	103	103	
February...		86	87	86	83	86	94	76	92	87	84	85	92	98	91	98	91	103	94	100	59	79	101	99	100	59	71	103	103	
March...		87	88	88	85	86	94	82	90	85	82	91	69	94	91	98	94	103	94	100	59	81	100	99	100	59	71	103	103	
April...		88	89	88	86	88	92	90	91	86	81	90	69	89	92	98	94	105	94	100	59	86	101	99	100	64	76	103	103	
May...		89	90	89	87	89	94	90	94	90	80	81	73	89	93	98	95	98	94	100	59	86	101	99	100	64	76	103	103	
June...		88	88	88	86	88	92	90	91	86	81	90	69	89	92	98	94	105	94	100	59	86	101	99	100	64	76	103	103	
July...		88	88	88	86	88	92	90	91	86	81	90	69	89	92	98	94	105	94	100	59	86	101	99	100	64	76	103	103	
August...		88	88	88	86	88	92	90	91	86	81	90	69	89	92	98	94	105	94	100	59	86	101	99	100	64	76	103	103	
September...		89	90	89	87	89	94	90	94	90	80	81	73	89	93	98	95	98	94	100	59	86	101	99	100	64	76	103	103	
October...		91	96	94	93	96	92	105	94	90	79	89	108	88	85	88	98	95	92	92	99	43	90	100	101	100	54	75	100	99
November...		92	94	93	91	92	92	91	94	90	80	85	130	91	89	98	95	81	92	92	99	59	79	99	101	99	70	79	100	101
December...		94	92	90	90	92	92	79	93	89	81	88	127	100	93	98	95	84	92	99	71	86	100	101	99	69	84	100	100	98
1916	1916 Average price																													
January...		94	92	90	90	92	92	83	92	91	80	89	114	100	94	98	95	84	92	99	71	86	100	101	99	70	86	101	98	
February...		93	94	93	94	94	94	89	92	93	82	89	114	100	94	98	95	84	92	99	71	86	100	101	99	70	86	101	98	
March...		94	95	94	93	94	97	98	95	96	86	93	79	103	98	98	95	86	90	98	92	94	101	99	87	87	96	99	99	
April...		96	98	95	98	97	99	99	96	98	96	97	73	105	98	98	95	88	90	99	92	100	101	99	86	100	99	99	99	
May...		96	100	100	101	103	100	99	98	99	96	97	73	105	98	98	95	88	90	99	92	100	101	99	86	100	99	99	99	
June...		98	106	107	109	106	104	102	102	102	102	102	78	133	101	98	97	88	90	99	92	100	101	99	101	86	100	99	99	
July...		97	105	107	107	105	103	105	104	103	102	102	78	133	101	98	97	88	90	99	92	100	101	99	101	86	100	99	99	
August...		98	106	107	106	105	103	105	104	103	102	102	78	133	101	98	97	88	90	99	92	100	101	99	101	86	100	99	99	
September...		98	106	107	106	105	103	105	104	103	102	102	78	133	101	98	97	88	90	99	92	100	101	99	101	86	100	99	99	
October...		103	104	107	106	105	103	105	104	103	102	102	78	133	101	98	97	88	90	99	92	100	101	99	101	86	100	99	99	
November...		107	108	107	106	105	103	105	104	103	102	102	78	133	101	98	97	88	90	99	92	100	101	99	101	86	100	99	99	
December...		111	108	97	99	99	100	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
1917	1917 Average price																													
January...		115	100	100	101	102	100	103	102	105	120	105	160	113	121	110	113	128	131	101	132	102	99	99	106	133	130	103	104	104
February...		122	104	107	106	112	113	112	107	108	122	108	138	122	124	110	113	133	139	101	205	107	100	99	106	133	130	103	104	104
March...		119	105	110	108	115	111	120	114	111	124	110	93	122	124	110	113	133	139	101	205	107	100	99	106	133	130	103	104	104
April...		139	108	118	116	125	124	134	127	120	147	116	96	127	131	110	115	133	140	101	199	104	100	99	106	133	130	103	104	104
May...		145	112	120	121	129	128	138	135	130	156	118	96	127	131	110	115	133	140	101	199	104	100	99	106	133	130	103	104	104
June...		145	111	121	122	130	133	131	140	130	156	117	96	127	131	110	115	133	140	101	199	104	100	99	106	133	130	103	104	104
July...		140	118	120	129	134	138	144	144	144	156	117	96	127	131	110	115	133	140	101	199	104	100	99	106	133	130	103	104	104
August...		141	118	130	127	134	135	146	144	144	156	117	96	127	131	110	115	133	140	101	199	104	100	99	106	133	130	103	104	104

could scarcely remain in business under such circumstances, yet the Philadelphia business directory shows that there are about 4,550 independent grocers alone supplying food to Philadelphia consumers, not to mention the numerous meat dealers.

However, this is not a discussion of causes and remedies, but an analysis of tendencies. It has shown that the trend of food prices is decidedly upward, and has accurately measured that trend for Philadelphia. Moreover, it appears that the upward movement is likely to continue. While prices fell in July of this year they started upward again in August, and presumably are still on the increase. So long as the United States continues to feed a world whose production is curtailed by the ravages of war, and so long as gold continues to pour into this country at its present pace, prices may be expected to continue to rise. The question that now presents itself is that of real wages. Are the money wages of the masses keeping pace with the trend in prices? If not, real wages are falling, standards of living are being lowered, and from the standpoint of social welfare, we are not prospering. The study of wage statistics which follows will answer that question for Philadelphia.

THE TREND IN WAGES

CHARLES REITELL, PH.D.

The purpose of this wage study undertaken by the writer for the Mayor's Food Committee was to find out primarily what changes had taken place in individual wages paid in Philadelphia from January 1, 1916 to March 10, 1917. In order to determine such changes as thoroughly and completely as possible two distinct sources of information were used:

1. Wage returns from trade and labor unions.
2. The direct study of payrolls. This second source, which was by far the more complete, had the actual pay records of the employer as working material. Not only so-called wage-earners, but salaried men as well were considered.

The results of these two divisions of the work are given in detail.

I TRADE AND LABOR UNIONS

To acquire the wage data from unions, special forms were sent to every labor organization in the city. This form requested wage

rates both at the beginning and at the close of the period (January 1, 1916 to March 10, 1917), also the length and exact period of wage contracts under which members were working.

Data covering 11,542 union workers were received, but of these only 7,518 were reliable and in such a shape as to be of value as a basis for conclusions.

The unions adequately reporting, with the number of active members in each were:

Name of Union	Members Reporting
Boilermakers' Union #19.....	106
Moving Picture Operatives.....	134
Association of Plumbers and Steamfitters.....	960
Brewery Engineers.....	151
Bookbinders' Local #2.....	297
Pavers' Local #48.....	148
Brewers' Union #5.....	605
Upholsterers' and Weavers' Union #25.....	530
Plasterers' Union.....	82
Cement Finishers'.....	54
Lace Operatives' Union.....	365
Drivers' Union #491.....	128
Cigar Makers, Male.....	240
Cigar Makers, Female.....	212
Bartenders' International.....	1,485
Coopers' Union #108.....	178
United Hatters.....	605
International Union of S. and O. Engineers.....	250
Upholsterers' Union.....	285
Weavers' Union.....	403
Electrical Workers' Local #20.....	300
Total.....	7,518

During the sixty-two weeks covered, the following wage changes took place:

Of the 7,518 workers, 4,569, or approximately three-fifths received no increase in wages; 615, or about 8 per cent received increases amounting from 1 per cent to 10 per cent of their wages; 824, or close to 11 per cent received increases of 10 per cent to 20 per cent of their income, while 1,510, or approximately 20 per cent had increases in wages of more than 20 per cent during the period. Charted, these figures may take clearer form.

The reason why so large a number of union workers received no increases, is largely because of prevailing long-term contracts with their employers. Especially was this true of the bookbinders', brewery engineers', upholsterers', weavers' and many other unions. Members of labor organizations working under these contractual

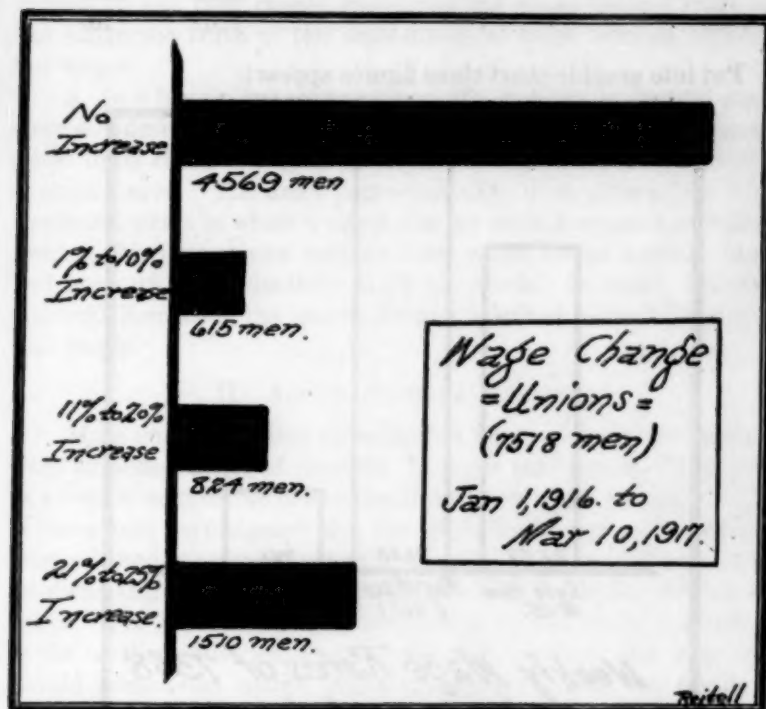


CHART VI

relations are not unlike the salaried men investigated, their slow changing incomes bearing no relation or adjustment to the quickly changing food prices. As one labor leader put it, "food prices are going up the elevator, while our wages have taken the stairs."

The actual amount of wages these workers were receiving on March 10, 1917 was:

WAGES OF 7,338 UNION WORKERS IN PHILADELPHIA MARCH 10, 1917

Wage Groups	Number	Percentage
Less than \$15 per week.....	2,877	38
\$15 to \$20 per week.....	3,680	49
Over \$20 per week.....	781	10
Incomplete	180	03
Total.....	7,518	100

Put into graphic chart these figures appear:

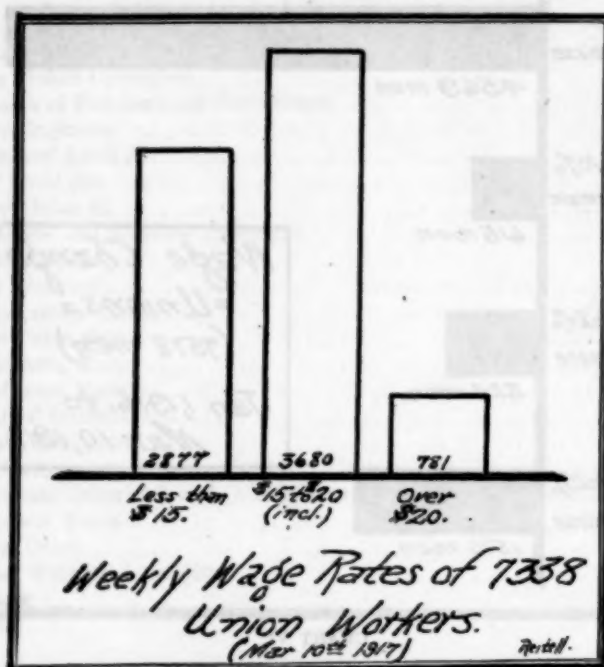


CHART VII

The following important conditions were found to prevail as general, or perhaps chronic, among the members of the unions investigated:

1. Everywhere unions were emphatic in calling our attention to the lack of any adjustment of long-time wage rates and short-time commodity prices. Even in those unions where rates had been increased within a period of two months, there was dissatisfaction

expressed. In the cases of long-term contracts, however, the greatest evil of this maladjustment was manifest.

2. As was to be expected the claim was paramount that wages were not high enough to meet those necessary costs needed for a fair standard of living. By applying the standard income for an individual and then closely examining the above income chart, one can judge the truth of the contentions of these workers regarding low wages.

3. In a few unions covering over 600 workers, successful strikes were an admitted failure. This economic paradox is quickly understood upon citing the most pronounced case—that of the Clothing Makers Union. The union had returned to work after a four weeks' successful strike in which a one dollar per week increase was realized. During this four weeks' interim food prices for an average family had gone up approximately \$1.75 per week. In short, the strike although increasing the money income, resulted in the falling of the real wages.

II ACTUAL PAYROLL STUDIES

More important than these figures, however, are those obtained from an actual study of payrolls. In order that this study might be as accurate as possible proportional representation was used. That is the plants investigated and the individual wage cards obtained were selected in proportion to the importance of the different industries and the different trades within the industry in the city's enterprises. For instance, almost one-fourth of the city's workers are in the textile industries, consequently one-fourth of the wage cards should come from textile mills. Similarly, within the textile industries are several different trades, and the cards from individual workers should be proportioned to the number of men employed in each occupation. By following this method the wage cards taken from the records were made fairly representative of the trend in wages throughout the city.

In all, 1,600 wage studies were made, covering by proportional representation about 44,200 workers. The average weekly incomes of these 44,200 represented workers for the sixty-two weeks covered by the investigation are as follows:

AVERAGE WEEKLY INCOMES OF 44,200 WAGE-EARNERS IN PHILADELPHIA

January 1, 1916 to March 10, 1917

Date	Amount	Date	Amount
1916			
January 8.....	\$9.22	August 19.....	\$11.58
15.....	11.64	26.....	11.43
22.....	11.66	September 2.....	11.64
29.....	11.05	9.....	10.94
February 5.....	10.78	16.....	10.67
12.....	11.93	22.....	11.13
19.....	11.68	30.....	12.53
26.....	11.88	October 7.....	11.89
March 4.....	11.36	14.....	12.30
11.....	11.68	21.....	12.29
18.....	11.83	28.....	11.93
25.....	11.68	November 4.....	12.40
April 1.....	11.26	11.....	11.87
8.....	10.54	18.....	13.76
15.....	11.81	25.....	13.78
22.....	12.03	December 2.....	11.85
29.....	11.45	9.....	13.66
May 6.....	11.78	16.....	11.57
13.....	12.21	23.....	12.35
20.....	11.98	30.....	12.73
27.....	12.07	1917	
June 3.....	11.01	January 6.....	11.52
10.....	11.19	13.....	12.01
16.....	11.21	20.....	12.93
23.....	11.03	27.....	13.84
30.....	10.78	February 3.....	14.13
July 7.....	10.28	10.....	12.12
14.....	12.19	17.....	13.66
21.....	11.46	24.....	14.12
28.....	11.98	March 2.....	13.35
August 4.....	11.58	10.....	13.40
12.....	11.16		

The increase in wages for the last month of the investigation over the first month is 22.8 per cent.

The weekly fluctuations can be well seen in the chart.

These wage statistics afford a basis for comparison with the food price figures given in the preceding article. Taking the average wages for the year 1916 as 100, relative wages by months can be computed comparable with the relative food prices there quoted. These relative wages are shown in graphic form side by side with

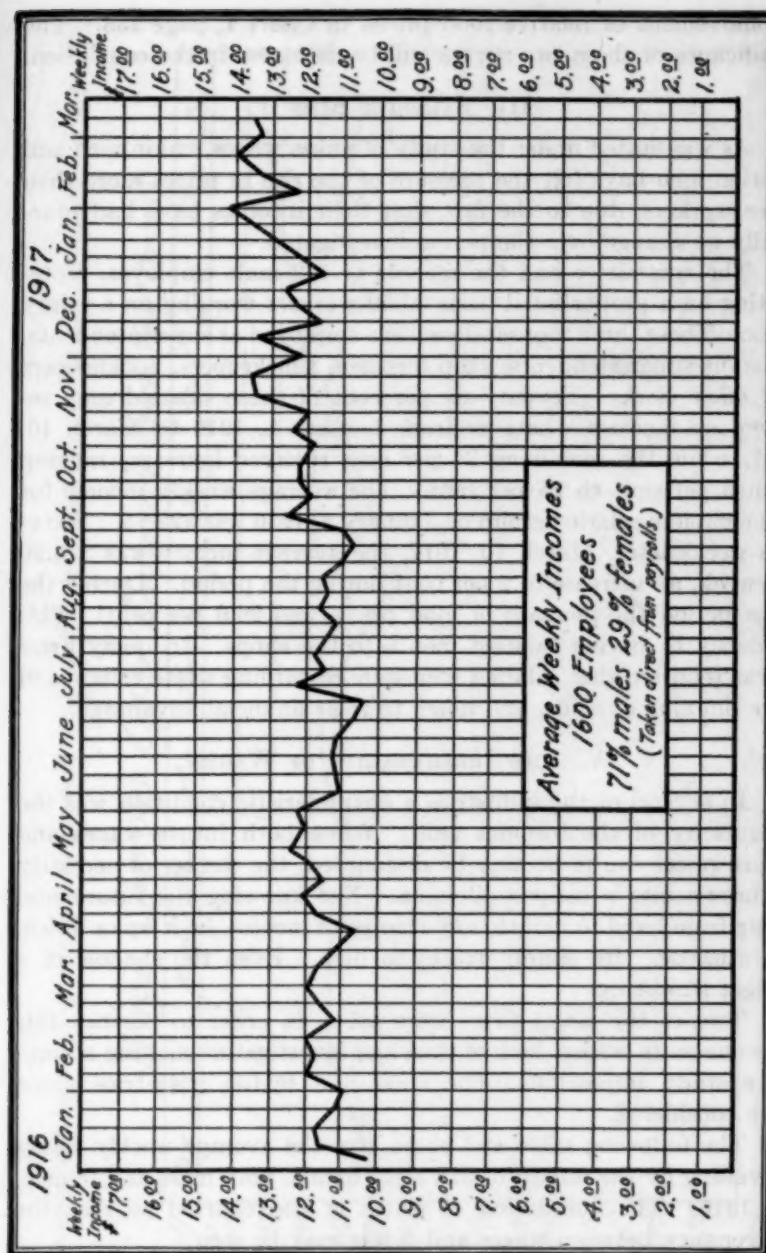


CHART VIII

the movement of relative food prices in Chart I, page 238. The significance of these two curves will be discussed in the conclusion.

III SALARIED MEN

As was stated under the study of union wages, union men and salaried men have felt the pressure of the rise in prices more than other workers, due to the fact that their incomes have had practically no change over the period investigated.

The committee had the records of 112 male employees, representing on a proportional basis 3,050 workers working on a salary basis. These three thousand men are employed as superintendents, assistant superintendents, shop foremen, timekeepers, bookkeepers and office clerks. Seventy-six per cent of these salaried men received no increase whatever from January 1, 1916 to March 10, 1917, while the remaining 24 per cent received increases ranging from 5 per cent to 25 per cent. The average weekly income for this complete salaried group on January 1, 1916 was \$22.75. Sixty-two weeks later, March 10, 1917, the average income was \$23.20 per week, an increase of 2 per cent during the period. During the same period the increase in food prices was 26.6 per cent! This tendency is driving salaried men into the shops. In many firms it was reported that salaried men were discarding white collars and were donning overalls, and much to their financial advantage.

IV THE IRREGULARITY OF WAGES

In several of the industries a characteristic condition was the irregularity of the incomes paid. When both future wages and future prices can in no way be discounted, the worker of necessity is thrown into a serious dilemma. Not knowing the future and living from hand to mouth, any change in income, be it up or down, plays havoc. He simply trusts to luck. Even the shadow of a budget is missing.

Two of the larger firms were taken in order to portray this unevenness in wages, lack of time and investigators making a complete study impossible. The cigar and textile industries alone were considered.

The following table and chart give the average weekly wages prevailing by the month of 324 cigar hands, both male and female, for 1916. The fluctuation of prices is also charted so that the discrepancy between wages and prices may be seen.

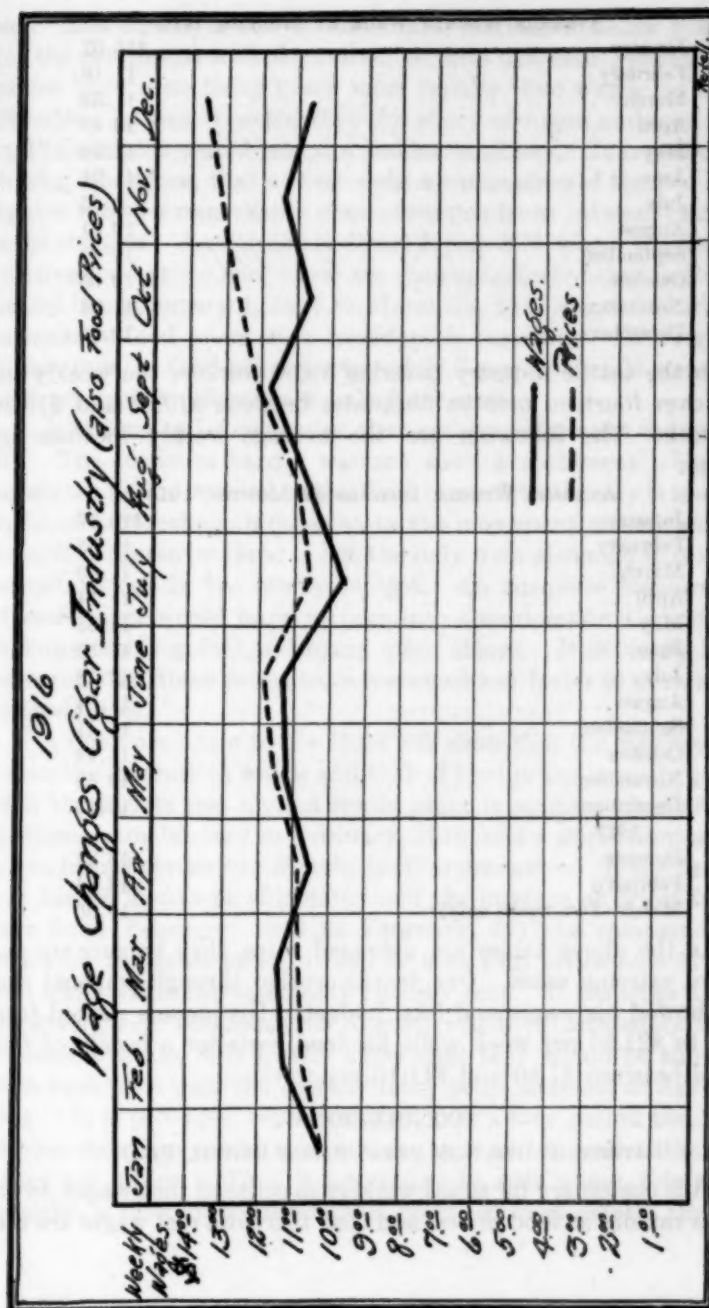


CHART IX

AVERAGE WEEKLY WAGE BY MONTHS, 1916

January.....	\$10.07
February.....	11.19
March.....	11.32
April.....	10.49
May.....	11.04
June.....	11.21
July.....	9.65
August.....	10.61
September.....	11.73
October.....	10.65
November.....	11.24
December.....	10.68

In the textile industry covering 1,650 workers the weekly income over fourteen months fluctuates between \$10.87 and \$15.36 per week. The following are the average weekly incomes by months:

AVERAGE WEEKLY INCOMES BY MONTHS, 1916

January.....	\$10.87
February.....	11.55
March.....	11.50
April.....	11.14
May.....	11.35
June.....	11.50
July.....	12.18
August.....	11.04
September.....	11.41
October.....	11.99
November.....	12.55
December.....	13.13

1917

January.....	13.21
February.....	13.44
March (Two weeks only).....	15.36

As the above tables are averaged rates, they balance up and remove extreme cases. One textile worker through personal contact showed his wages and food budget. His income ranged from \$7.34 to \$21.50 per week while his food costs for a family of four ranged between \$7.80 and \$11.10 per week.

CONCLUSIONS

RAYMOND T. BYE, A. M., AND CHARLES REITELL, PH.D.

It is customary for social workers to contend that wages do not rise as rapidly as food prices, and that therefore real wages are fall-

ing. The figures of the United States Bureau of Labor Statistics for the country as a whole, indeed, confirm this belief, showing that prices have been rising much more rapidly than wages for several decades. It was expected that this study of wages and food prices in Philadelphia would reveal a similar tendency. It is rather surprising, therefore, that at first sight a comparison of the two sets of figures shows a remarkably close correspondence between price and wage changes. A reference to Chart I, page 238, where the monthly relative food prices and wages are shown, indicated that during the period from January 1, 1916 to March 15, 1917 wages followed the increase in food prices with considerable regularity. During these fifteen months food prices increased 26.6 per cent while wages rose 23.6 per cent, a difference of only 3 per cent.

Is it then to be concluded that real wages are not changing at all? The statistics hardly warrant such a statement. Unfortunately the period covered by the Food Committee's study is too short to be of any real significance as to the movement of real wages in general. Moreover, food is not the only item although it is a very important one in the family budget. An adequate measurement of real wages would have to take into consideration the prices of clothing, lodging, fuel and many other things. It is hardly likely, however, that these prices have increased any faster or even as fast as food prices.

A reference again to the chart will show that the difference between the increase in wages and that of food prices is really greater than the figures just quoted would make it appear. A sharp rise in wages from January to February, 1916, and a slight drop in food prices from February to March, 1917, is deceptive. If the January and March figures be eliminated and the increase of prices for the year from February, 1916 to February, 1917 be compared with wages for the same period it will be seen that prices rose 31.1 per cent while wages increased only 16.0 per cent. If the wage figures, moreover, were continued to August, which unfortunately it was impossible to do, it is hardly likely that they would be shown to have kept pace with the extraordinary price increases of April and May. It is probable, therefore, that over a long period the Philadelphia statistics would bear out the general impression that real wages are falling. What is interesting to note about this study, however, is that for a considerable group of wage-earners the phe-

nominal rise in food prices from January, 1916 to March, 1917 has not entailed as great a hardship as might at first be supposed. Dr. Reitell's investigation showed this to be particularly true of the iron and steel and other "war" industries. On the other hand, as has been pointed out, for the salaried employes and trade unionists working on wage contracts it has meant a considerable hardship. On the whole it seems probable that wages are increasing less rapidly than food prices, and that in consequence standards of living in the long run are slowly falling.

CONSTITUTIONALITY OF FEDERAL REGULATION OF PRICES ON FOOD AND FUELS

BY CLIFFORD THORNE,

Lawyer, Chicago.

A question has been raised in the minds of some eminent gentlemen who are in entire accord with the policy of regulating prices on food and fuels concerning the constitutional power of the federal government to regulate prices on commodities or services, other than those which are strictly public in character, like a railroad which has received certain privileges from the public in return for which it is subject to public regulation.

THE ISSUES

Two issues are involved: (1) the extent of jurisdiction by the federal government as distinguished from the several states over the subjects in question; and (2) does the police power of either a state or of the federal government include the authority to fix prices on such articles as food and fuels at a time like the present.

Our position is that Congress has the constitutional authority to establish or to authorize some tribunal to establish reasonable maximum prices on food and fuels during the period of the war. In support of this position we will briefly outline the fundamental principles of law which are involved. During the discussion of the cases we should bear in mind constantly:

A. The vital connection between the production and equitable distribution, at reasonable prices, of food and fuels, with the whole

defense program of the federal government, (1) in the manufacture and transportation of war munitions, and (2) in the efficient sustenance of the nation during the world war, wherein the other principal combatants have found it necessary to take over many of their industries, or to control the prices on these basic commodities during practically every stage of their participation in the conflict.

B. The monopolistic character of these enterprises at the present time.

C. The effect of no regulation and control upon the general welfare of the public—directly, through their own purchases; and indirectly, but nevertheless more powerfully, in the advancing charges of railroads and public utilities of all kinds.

OUTLINE OF LEGAL PROPOSITIONS

The legal propositions which we hope to sustain may be summarized as follows:

1. In the interpretation of the Constitution the trend of the court decisions has been to limit the police power of the Congress to those subjects over which the federal government is given jurisdiction or control; all not so specifically granted being reserved to the several states.

2. The exercise of the police power to provide for the common defense carries with it all that which is necessary for the safety and welfare of the people during the period of the war, many things being permissible in a time of war which are prohibited in a time of peace. The safety of the state is of supreme importance.

3. The exercise of the police power over commerce, by either the state or federal governments, on subjects properly within their respective jurisdictions, has been sustained as to various matters, including:

The prevention of interference with the freedom of commerce by combinations in restraint of trade.

The prevention of nuisances.

The prevention of unreasonable charges, either excessive or discriminatory in character.

I

In the interpretation of the Constitution, the trend of the court decisions has been to limit the police power of Congress to those subjects over which the federal government is given jurisdiction or control; all those not specifically granted being reserved to the several states.

The above proposition is not subject to argument. There can be no question on the proposition that the Constitution grants to

the federal government the power to: (a) provide for the common defense; and (b) regulate interstate commerce.

A question of some difficulty frequently arises when we attempt to draw the line between state and interstate commerce. In the case entitled *United States v. E. C. Knight Co.*, 156 U. S., 1, the court held that the manufacture of sugar within the bounds of a given state did not constitute a restriction upon interstate commerce and thereby subject to the federal anti-trust act. The court went so far as to state:

Contracts, combinations, or conspiracies to control domestic enterprise in manufacture, agriculture, mining, production in all its forms, or to raise or lower prices or wages, might unquestionably tend to restrain external as well as domestic trade, but the restraint would be an indirect result, however inevitable and whatever its extent, and such result would not necessarily determine the object of the contract, combination, or conspiracy.¹

The foregoing dictum in so far as it referred to a combination to raise or lower prices not being subject to the federal act was reversed in the later case of *Addyston Pipe and Steel Co. v. U. S.*, 175 U. S., 211.

The distinction between the manufacture and a contract to sell, was clearly made by the court in the *Knight Case*, and that distinction has been followed in subsequent decisions. While holding that the federal act did not apply to the police regulation of a manufacture within a state, the court held, however, that:

It will be perceived how far-reaching the proposition is that the power of dealing with a monopoly directly may be exercised by the general government whenever interstate or international commerce may be ultimately affected. The regulation of commerce applies to the subjects of commerce and not to matters of internal police. Contracts to buy, sell, or exchange goods to be transported among the several states, the transportation and its instrumentalities, and articles bought, sold, or exchanged for the purposes of such transit among the states, or put in the way of transit, may be regulated, but this is because they form part of interstate trade or commerce.²

In the *Addyston Pipe and Steel Company Case*, 175 U. S., 211, the principle in the *Knight Case* was restated in the following language:

The case was decided upon the principle that a combination simply to control manufacture was not a violation of the act of Congress because such a contract or

¹ *United States v. E. C. Knight Co.*, 156 U. S., 16.

² *Ibid.*, p. 13.

combination did not directly control or affect interstate commerce, but that contracts for the sale and transportation to other states of specific articles were proper subjects for regulation because they did form a part of such commerce.³

A commodity need not have commenced its journey beyond the bounds of a state, and yet it may still have been sold for delivery in another state. A combination among dealers may be subject to federal regulation. In the language of the court in the *Addyston Case*:

Decisions regarding the validity of taxation by or under state authority, involving sometimes the question of the point of time that an article intended for transportation beyond the state ceases to be governed exclusively by the domestic law and begins to be governed and protected by the national law of commercial regulation, are not of very close application here. The commodity may not have commenced its journey and so may still be completely within the jurisdiction of the state for purposes of state taxation, and yet at the same time the commodity may have been sold for delivery in another state. Any combination among dealers in that kind of commodity, which in its direct and immediate effect, forecloses all competition and enhances the purchase price for which such commodity would otherwise be delivered at its destination in another state, would in our opinion be one in restraint of trade or commerce among the states, even though the article to be transported and delivered in another state were still taxable at its place of manufacture.⁴

The same principle that was enunciated in the *Addyston Case* was recognized in *Swift & Co. v. U. S.*, 196 U. S., 375. In this case the rule applicable to the particular combination in restraint of trade was distinguished from that described in the *Knight Case*, *supra*. The combination for the control of the purchase and sale of cattle was held to be in violation of the federal act.

The injunction, however, refers not to trade among the states in cattle, concerning which there can be no question of original package, but to trade in fresh meats, as the trade forbidden to be restrained, and it is objected that the trade in fresh meats described in the second and third sections of the bill is not commerce among the states, because the meat is sold at the slaughtering places, or when sold elsewhere may be sold in less than the original packages. But the allegations of the second section, even if they import a technical passing of title at the slaughtering places, also import that the sales are to persons in other states, and that the shipments to other states are part of the transaction—"pursuant to such sales"—and the third section imports that the same things which are sent to agents are sold by them, and sufficiently indicates that some at least of the sales are of the original packages. Moreover, the sales are by persons in one state

³ *Addyston Pipe and Steel Co. v. U. S.*, 175 U. S., 240.

⁴ *Ibid.*, 245, 246.

to persons in another. But we do not mean to imply that the rule which marks the point at which the state taxation or regulation becomes permissible necessarily is beyond the scope of interference by Congress in cases where such interference is deemed necessary for the protection of commerce among the states. Nor do we mean to intimate that the statute under consideration is limited to that point.⁵

In harmony with these principles is the act relative to the inspection by federal authorities of livestock at the various markets.⁶

II

The exercise of the police power to provide for the common defense carries with it all that which is necessary for the safety and welfare of the people during the period of the war; many things being permissible in a time of war which are prohibited in times of peace. The safety of the state is of supreme importance.

This principle was splendidly stated in one of the Federalist letters, as follows:

As the duties of superintending the national defense and of securing the public peace against force or domestic violence involves a provision for casualties and dangers to which no possible limits can be assigned, the power of making that provision ought to know no other bounds than the exigencies of the nation and the resources of the community.⁷

In a very old and celebrated decision by the Supreme Court of Pennsylvania in 1788, the clear distinction is made as to the necessarily wide power of Congress or of the federal government, during a state of war.

The case was this: Congress, perceiving that it was the intention of the British army to possess themselves of Philadelphia, and being informed that considerable deposits of provisions, etc., were made in that city, entered into a resolution on the eleventh of April, 1777, that a committee should be appointed to examine into the truth of their information; and if it was found true, to take effectual measures, in conjunction with the Pennsylvania Board of War, to prevent such provisions from falling into the hands of the enemy. . . .

On this state of facts the court held:

On the circumstances of this case, two points arise;

- 1st. Whether the appellant ought to receive any compensation, or not? and
- 2nd. Whether this court can grant the relief which is claimed?

⁵ *Swift & Co. v. U. S.*, 196 U. S., 375, 399.

⁶ I Supp. Rev. Stat., p. 938, as amended in II Supp. Rev. Stat., p. 404.

⁷ *The Federalist*, Letter 31.

Upon the first point we are to be governed by reason, by the law of nations, and by precedents analogous to the subject before us. The transaction, it must be remembered, happened *flagrante bello*; and many things are lawful in that season, which would not be permitted in a time of peace. The seizure of the property in question, can, indeed, only be justified under this distinction; for, otherwise, it would clearly have been a trespass; which, from the very nature of the term, *transgressio*, imports to go beyond what is right.⁸ It is a rule, however, that it is better to suffer a private mischief, than a public inconvenience; and the rights of necessity, form a part of our law. . . .

Houses may be razed to prevent the spreading of fire, because for the public good.⁹ We find, indeed, a memorable instance of folly recorded in the 3rd volume of Clarendon's History, where it is mentioned that the Lord Mayor of London, in 1666, when that city was on fire, would not give directions for, or consent to, the pulling down of forty wooden houses, or to the removing of the furniture, etc., belonging to the lawyers of the temple, then on the circuit, for the fear he should be answerable for trespass; and in consequence of this conduct half that great city was burnt.

We are clearly of opinion, that Congress might lawfully direct the removal of any articles that were necessary to the maintenance of the Continental army, or useful to the enemy, and in danger of falling into their hands; for they were vested with the powers of peace and war, to which this was a natural and necessary incident. And, having done it lawfully, there is nothing in the circumstances of the case, which, we think, entitles the appellant to a compensation for the consequent loss.¹⁰

III

The exercise of the police power over commerce, by either the state or federal governments (on subjects properly within their respective jurisdictions), has been sustained as to various matters, including:

(1) *The prevention of interference with the freedom of commerce by combinations in restraint of trade;*

(2) *The prevention of nuisances; and*

(3) *The prevention of unreasonable charges, either excessive or discriminatory in character,*

(a) *By companies engaged in a public service; and*

(b) *By companies engaged in a business in which the public has an interest, even though that business is not strictly public in character.*

Scores of precedents could be cited in support of the foregoing propositions, but we are only concerned in the last one stated, and it is this issue about which the present controversy hinges.

⁸ 5 Bac. Abr., 150.

⁹ Dyer, 36. Rud. L. and E., 312. See Puff, Lib. 2, c. 6, Sec. 8. Hutch. Mor. Philos. Lib. 2, c. 16.

¹⁰ *Respublica v. Sparhawk*, 1 Dallas, 357, 362, 363.

The "police power" of a government is very extensive and cannot be defined definitely at any particular time; it is that power of the government to do that which is necessary for the general welfare of the people. This power has been interpreted as including regulations for the health, morals and safety of the public, to prevent excessive and discriminatory charges, to prevent combinations in restraint of trade, to provide for the common defense, and for such other things as may arise from time to time as may be deemed for the general welfare of society. This police power of providing for "the general welfare" was specifically granted to Congress by the Constitution of the United States. Mr. Justice Miller in the *Slaughter House Cases*, 16 Wall., 36, 62, described the police power in the following language:

This power is, and must be, from its very nature, incapable of any very exact definition or limitation. Upon it depends the security of social order, the life and health of the citizen, the comfort of an existence in a thickly populated community, the enjoyment of private and social life, and the beneficial use of property.¹¹

The language of the Constitution in both the Preamble and in Section 8 of Article I, very clearly grants this broad power of caring for the "general welfare" to the federal government.

Many have specifically declared recent acts of Congress to be unconstitutional, holding that such would be the ruling of any court in a case properly presented were it not for the possible effect of the strenuous war period at the present date. Others tremble for future developments along these same lines. It is our belief that the power of Congress to provide for the establishment of reasonable maximum charges on food and fuels has been clearly recognized by the courts in well considered opinions of former days, and there can be no question about the power of Congress to act in the present emergency.

Mr. Ernst Freund, of the University of Chicago, in his work on *The Police Power*,¹² has quite accurately summarized the law relative to the power of a government to regulate prices under its exercise of the police power, in the following language:

The justification for regulating charges in some particular business would usually be that it constitutes a *de jure* or *de facto* monopoly or enjoys special privileges; but it may also be that the commodity selected is a necessary of life, or that

¹¹ Justice Miller in the *Slaughter House Cases*, 16 Wall., 36, 62.

¹² See page 389.

*it is essential to the industrial welfare of the community, or that it has been immemorially the subject of regulation.*¹³

The context surrounding this statement by Mr. Freund should be considered:

A possible solution of the difficulty may be found in the application of the principle of equality. Conceding that it is within the general scope of the police power to prevent unreasonable charges as constituting a form of economic oppression and, as a means of prevention, to fix rates, yet it is clear that a systematic regulation of charges of all commodities and services is not within the range of practical legislative policy. All such legislation will necessarily apply to particular classes of business. Under the principle of equality the classes so singled out should have some special relation to the possibility of oppression. The justification for regulating charges in some particular business would usually be that it constitutes a *de jure* or *de facto* monopoly or enjoys special privileges; but it may also be that the commodity selected is a necessary of life, or that it is essential to the industrial welfare of the community, or that it has been immemorially the subject of regulation. Upon this theory it is possible to account for existing legislation without conceding legislative power with regard to any and all commodities, which it may choose to select, and on the other hand, to allow for new applications of this power, while subjecting them to an efficient judicial control which will undoubtedly be claimed and exercised. There will thus be an adequate safeguard against arbitrary class legislation in the matter of regulation of charges. All legislation in this matter will, moreover, be subject to the principle of reasonableness of the rate fixed,—a principle which has become established in a series of important decisions.¹⁴

Illustrating the tendency of these rules in regard to the regulation of prices, Mr. Freund states the following:

It has been shown that the opinions delivered in the earlier grain elevator cases strongly relied upon the monopolistic character of the business. The monopoly in these cases was not a legal one, but it was held to exist virtually and *de facto*. The argument of special privileges does not avail in such a case to justify the regulation of charges; but since the common regulating factor, competition, is absent, a condition is presented which calls for the exercise of the police power for the prevention of oppression. The police power is exercised for the prevention of monopolies, where they rest upon the preventable machinations; it follows that where a monopoly is inevitable by reason of natural conditions, the power must exist to minimize its detrimental effects. Wherever physical conditions are naturally limited for carrying on some business, a case arises for special control; and this will often be true of mill and wharf rights; but it is also possible that economic conditions will tend to make a business a monopoly; so the business of an exchange cannot be advantageously carried on except by a coöperation and

¹³ The italics are mine.

¹⁴ *The Police Power*, by Ernst Freund, page 389.

concentration of all interests. The regulation of charges would seem as justifiable here as in the grain elevator cases.¹⁵

Some illustrations of these same principles are cited from England by Mr. Freund, as follows:

An instance of regulation of prices in case of a monopoly is found in Dasent, Acts of the Privy Council, 1545, p. 192; on complaint made by the whole company of bowyers that one Petersvan Helden, of the Steelyard, having in his hands the whole trade of bringing in of bowstaves into the realm, demanded such excessive prices as they were not able to live up the gain that should rest upon them, giving so excessively for the same, it was ordained that he should not demand above £7 sh. 10 for the band.—In the leading English case, *Allnut v. Inglis*, 12 East, 527, the power to prevent unreasonable charges was based upon the special privileges enjoyed by the dock company.

In the leading case of *Munn v. Illinois*, 94 U. S., 113, the basic principles were stated justifying the exercise of the police power by the state in the naming of charges for services rendered. These doctrines have been applied consistently in subsequent cases.

In *Budd v. New York*, 143 U. S. 517, at page 535, the Supreme Court succinctly stated the gist of the doctrine established in *Munn v. Illinois*, as follows:

It said, that under the powers of government inherent in every sovereignty, "the government regulates the conduct of its citizens one toward another, and the manner in which each shall use his own property, when such regulation becomes necessary for the public good"; and that, "in their exercise it has been customary in England from time immemorial, and in this country from its first colonization, to regulate ferries, common carriers, hackmen, bakers, millers, wharfingers, inn-keepers, etc., and in so doing to fix a maximum of charge to be made for services rendered, accommodations furnished, and articles sold." It was added: "To this date, statutes are to be found in many of the states upon some or all these subjects; and we think it has never yet been successfully contended that such legislation came within any of the constitutional prohibitions against interference with private property."

In a case entitled *Cotting v. Kansas City Stock Yards Co.*, 183 U. S., 79, the writer of the opinion of the court, Mr. Justice Brewer, attempted to make a distinction between the method by which the state should determine the charges levied by a company performing some public service, as distinguished from companies not engaged in such services, and which have devoted their property to a use in which the public has an interest.¹⁶ Mr. Justice Brewer cited *Munn*

¹⁵ *The Police Power*, by Ernst Freund, p. 387.

¹⁶ *Cotting v. Kansas City Stock Yards Co.*, 183 U. S., 85.

v. *Illinois*, and a large number of subsequent decisions based upon that case, making the following comment:

These decisions *go beyond* but are in line with those in which was recognized the power of the state to regulate charges for services connected with any strictly public employment, as, for instance, in the matter of common carriage, supply of water, gas, etc.¹⁷

Mr. Justice Brewer had frequently dissented from the prevailing application of *Munn v. Illinois*, but in writing the opinion in the *Stock Yards Case*, he frankly held that the state had the power to make reasonable regulation of the charges for services rendered by the Stock Yards Company.

At great length Mr. Justice Brewer outlined a difference in principle in the determination of what the charges should be for a company performing a public service, and on performing a service in which the public is interested, but not a distinctly public employment. He also discussed a second issue and held that the statute of Kansas was in violation of the Fourteenth Amendment to the Constitution of the United States in that it applied to the Kansas City Stock Yards Company only, and not to other companies engaged in like business in that state.

It was on this second point, and that alone, that a majority of the Supreme Court concurred with Mr. Justice Brewer, who wrote the opinion. Six members of the court declined to concur or to express an opinion on the first question stated. In this decision Mr. Justice Brewer stated:

While not a common carrier, nor engaged in any distinctly public employment, it is doing a work in which the public has an interest, and, therefore, must be considered as subject to government regulation.

In the recent case of *German Alliance Insurance Co. v. Kansas*, 233 U. S., 389, the issue was whether insurance rates could be regulated by the state under its police power. The opposition claimed:

The basic contention is that the business of insurance is a natural right, receiving no privilege from the state, is voluntarily entered into, cannot be compelled nor can any of its exercises be compelled; that it concerns personal contracts of indemnity against certain contingencies merely. Whether such contracts shall be made at all, it is contended, is a matter of private negotiation and agreement, and necessarily there must be freedom in fixing their terms. And

¹⁷ *Cotting v. Kansas City Stock Yards Co.*, 183 U. S., 85. *Italics are mine.*

"where the right to demand and receive service does not exist in the public, the correlative right of regulation as to rates and charges does not exist."¹⁸

The issue was very clearly stated by the court in the following language:

We may put aside, therefore, all merely adventitious considerations and come to the bare and essential one, whether a contract of fire insurance is private and as such has constitutional immunity from regulation. Or, to state it differently and to express an antithetical proposition, is the business of insurance so far affected with a public interest as to justify legislative regulation of its rates!¹⁹

The discussion by the court of the factors involved is very instructive. Summarizing a review of the cases the court stated:

The cases need no explanatory or fortifying comment. They demonstrate that a business, by circumstances and its nature, may rise from private to be of public concern and be subject, in consequence, to governmental regulation. And they demonstrate, to apply the language of Judge Andrews in *People v. Budd*, 117 N. Y., 1, 27, that the attempts made to place the right of public regulation in the cases in which it has been exerted, and of which we have given examples, upon the ground of special privilege conferred by the public on those affected cannot be supported. "The underlying principle is that business of certain kinds holds such a peculiar relation to the public interests that there is superinduced upon it the right of public regulation." Is the business of insurance within the principle? It would be a bold thing to say the principle is fixed, inelastic, in the precedents of the past and cannot be applied though modern economic conditions may make necessary or beneficial its application. In other words, to say that government possessed at one time a greater power to recognize the public interest in a business and its regulation to promote the general welfare than government possesses today. We proceed then to consider whether the business of insurance is within the principle.²⁰

The court holds the insurance business to be of such a character as to justify public regulation. The existence of a monopoly as a justification for regulation is well established and generally recognized. Mr. Wyman in his work on *Public Service Corporations*, written while a member of the law faculty of Harvard, stated the accepted doctrine in the following language:²¹

It will have been noticed, therefore, that the principle of law which permits the regulation of these callings has never been abandoned, though the conditions calling for its application at various times have greatly changed. Whenever the

¹⁸ *German Alliance Insurance Co. v. Kansas*, 233 U. S., 405.

¹⁹ *Ibid.*, 406.

²⁰ *Ibid.*, 411.

²¹ Sec. 29, 33.

public is subjected to a monopoly the power of oppression, inherent in a monopoly, is restricted by law. Whenever, on the other hand, competition becomes free, both in law and in fact, the need of governmental regulation ceases; public opinion ceases to demand such regulation, and the law withdraws it.

The programme of organized society is practically to see to it that those who have gained a substantial control of their market shall not be left free to exploit those who look to them to supply their needs. Men now see clearly that freedom of action in the industrial world may work injuriously for the public, and it must then be restrained in the public interest. Having seen the results of unrestrained power we no longer wish those who have control of our destinies to be left free to do with us as they please. Such liberty for them would mean enslavement for us.

The broad police power of the government in regard to matters over which it has control has been constantly stated and restated in the decisions. The following is typical:

Regulations respecting the pursuit of a lawful trade or business are of very frequent occurrence in the various cities of the country, and what such regulations shall be and to what particular trade, business or occupation they shall apply, are questions for the state to determine, and their determination comes within the proper exercise of the police power by the state, and unless the regulations are so utterly unreasonable and extravagant in their nature and purpose that the property and personal rights of the citizen are unnecessarily, and in a manner wholly arbitrary, interfered with or destroyed without due process of law, they do not extend beyond the power of the state to pass, and they form no subject for federal interference.²²

CONCLUSION

Public necessity—the general welfare—is the test as to the extent of the police power of a government. What shall be regulated is a legislative question, and the courts will not interfere with the action of the Congress or state legislature over matters under their control, providing there is not a clear abuse of legislative discretion, an arbitrary action without reason or justification.

The regulation of prices on food and fuels during the war is justified for the reason that the general welfare of the people demands this action: (1) because the purchase and sale of these commodities in different parts of the country have been dominated by powerful combinations of moneyed interests which are exacting excessive charges for that which they have to sell; and (2) as a matter of common defense in a war where other governments have resorted to the same and even more drastic measures.

It would be a strange and most unfortunate situation, while

²² *Gundling v. Chicago*, 177 U. S., 183.

other governments are protecting their people from exorbitant charges at this crucial period in world history, if our government should be helpless to do so; or possessing that power, it should fail to perform a similar service for the American people.

Without attempting to discuss the various provisions of the measures which have passed Congress, if the basic principle upon which these laws are framed should be tested, the decisions of the courts of last resort clearly indicate that the acts in question would be sustained and be within the legislative discretion of Congress.

WHAT COÖPERATION CAN DO AND IS DOING IN LOWERING FOOD COSTS

BY PETER HAMILTON,

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Legislation and proclamations, intended to restrain the disposition toward exorbitant prices, can have but a temporary and imperfect result because they do not touch, or they touch very superficially, the fundamental cause of extortion. They are like the remedies of the old-fashioned medical practitioner of a generation ago, who treated symptoms with strong drugs instead of seeking to remove the cause of disease. Frequently the drug effects complicated the symptoms, so that the patient was in worse straits than before. Modern medicine has learned that until the cause has been removed it is futile to merely treat symptoms.

Scarcity of supply, greatly increased demand, one or both, are the legitimate immediate causes of high prices. Monopoly, artificial scarcity induced by withholding supplies from an eager market, cupidity, employing one pretext or another, are the immediate causes of extortion. But back of monopoly, back of cupidity and chicanery is the selfish motive of private profit. It is for this that men cheat each other and descend to all the unfair practices which have puzzled legislators and reformers. This is the fundamental cause of extortion and sharp practice between men and between nations. Indeed, if complete analysis be made, it is the cause of war itself. Our legislators and reformers are like the old-fashioned practitioner, frantically treating symptoms with strong

measures and not effecting a cure. The socialists, on the other hand, are good diagnosticians. They know the cause but they are short on therapeutics, and their remedy would be likely to throw the patient into fits. The syndicalists, known in this country as the "Industrial Workers of the World," have, like the socialists, diagnosed correctly, but their remedy would be the knife, a radical surgical operation at whatever risk to the patient.

The coöperator is the only one among these economic doctors who has the correct diagnosis and whose remedy will effect a cure by removing the cause without unduly upsetting the patient. He knows that the disease is chronic and must be subjected to a long course of treatment adapted to the patient's constitution. He does not believe in excessive doses that may disturb the digestion and nervous system of the invalid. His purpose is a complete cure, but he realizes that he need not hurry and does not administer his remedy faster than it can be absorbed and assimilated. Thus will he succeed where the others have failed, and the outcome is not in doubt though the time of its full accomplishment may be deferred.

At the outset of our consideration of coöperation as a means of lowering food costs, a distinction should be clearly recognized between producers' and consumers' coöperation. The former has for its underlying motive the making of profit, as much profit as possible, from the sale of its product. It would increase instead of lower prices. It would constitute the same kind of coördination of special interests, yielding disproportionate benefits to a few, more or less at the expense of the many, that we see in the trusts and with even greater menace to the general welfare; for it would, when fully grown, control not only the product of labor, as do the trusts, but also labor itself, as do the labor unions. With the selfish motive of private profit still present, the temptation to run up prices would be irresistible. Nor would there be, as, theoretically, in our present system, the wholesome restraint through the fear of drawing competitors into the field by putting the prices too high, for labor, especially if highly skilled, would be monopolized and held by its own self-interest, making impossible the organization of successful competition. It is easily imaginable that agricultural coöperation might lead to a similar result if a very large proportion of farmers were combined in one organization. Their motives would be no more philanthropic or self-sacrificing than any other kind of a trust,

and the rest of the world would have to pay the price that they might dictate or go hungry. The farmer, naturally and invariably, wants to sell in the highest market, to make the largest profit possible, and this is the purpose of all his efforts at coöperation. The citrus fruit growers and other organized agricultural interests have demonstrated the great potency of coöperation to get things done. But when they avoid a glutted market and keep themselves advised through excellent arrangements of communication as to where there is a scarcity and send their product into the undersupplied market, it is not with a desire to effect more perfect distribution *per se*, but to make more profit. Everyone is familiar with the wasteful and sometimes foolish efforts of the farmer to raise the price of his product by destroying part of it, and this while there are people in almost every community in dire need of what he burns. He ruthlessly seeks his profits; and this motive is not changed nor is his ruthlessness diminished when he, as a producer, coöperates. Coöperation with his fellow-producers enables him to effect economies, lifts him out of the slough of despond in which he desperately practices waste in a blind attempt to help himself, gives him the facilities of an up-to-date merchant in disposing of his yield, but just the same as ever before he still wants the highest price the traffic will bear and he espouses coöperation only because it helps him to realize this desire. In this kind of coöperation the quality of the product may be improved, many sources of waste eliminated and the farmer made prosperous and happy; but there is little prospect that it will lower food costs to the consumer.

Consumers' coöperation, on the other hand, yields no profits to one set of men out of the needs of another. It is a coming together for mutual benefit on the broadest, most inclusive conceivable basis of common interest—that of the consumer. Every human being is a consumer and eligible for participation in consumers' coöperation. Instead of a few with a class interest, as in producers' coöperation, it is, or may be, everybody, with a universal interest,—“each for all and all for each,” according to the motto of the English coöperators, and with all suspicion of exploitation eliminated. Here you have a new system of economics in which the only motive is to produce and distribute the good things of life at the lowest possible cost, because the sole beneficiaries and proprietors of the system are the consumers. All motives to charge

exorbitant prices are here absent. They cannot overcharge themselves, because any excess, however large or small, that may be charged above the cost of production and distribution, is returned to each member patron in the form of a dividend. To burn up or otherwise destroy anything in order to raise the price would be recognized as a pure waste and an obvious absurdity. Every saving, however small, benefits every consumer, just as every loss is his loss. Everybody would be hurt and nobody benefited by adulteration and misrepresentation, and so they have no place, no reason for existing, in consumers' coöperation.

This attempt to sharply contrast producers' with consumers' coöperation is prompted by the evident failure of many who speak and write on the subject to discern the radical difference between them. As they spring from different motives they should not be confused one with the other.

Consumers' coöperation as first inaugurated by the Rochdale Pioneers in 1844 was born out of a pressing necessity to reduce food costs. This was at first its only purpose. It succeeded more wonderfully than its founders, in all probability, ever expected. A brief recital of the story of the Rochdale Pioneers, though its details may be familiar to many, will do more than any extended argument to show the power of consumers' coöperation to reduce the cost of food and of every other necessity and to give the consumer command over the sources of the things he needs.

There had been a strike for higher wages among the flannel weavers of Rochdale, England, and the weavers were beaten and had to go back to work at the same pay. They claimed that this was not enough to buy their actual necessities. The workers in one mill, having faith in the good heart of their employer, went to him and showed him that rent and food and clothing came to more than their wages, that they were unable to meet expenses for bare necessities and that the education and proper care of their children was out of the question. They wanted his advice and help. He saw their desperation and was moved by sympathy, but he told them that if he raised wages he would not be able to meet competition and would have to go out of business. They, of course, saw the force of this. He was willing to pay higher wages if his competitors would all do the same, and he recommended that they try to induce the other mill owners to enter with him into such an arrangement.

It may be imagined how ineffective was this small band of humble workmen, hat in hand, trying to change the policies of the magnates of that day. In many instances they were not even granted an interview. Hopeless of obtaining more pay, they were driven to the expedient of trying to buy still more cheaply and out of this, their necessity, has arisen the great coöperative movement of Great Britain, which has done so much to keep a decent living within the reach of the workingman and after which have been patterned similar movements in many other countries.

Their first step was to pool their purchases of flour and to buy a sack at wholesale, instead of the small quantities at high prices their slender purses had previously made necessary. This was trundled in a wheelbarrow by one of their number, and thus was each family's share delivered. Though the saving was small, they had enough vision to see that if applied to many things it would become appreciable and mean for them the addition of some comforts to the actual necessities of life. But to deal in a variety of articles it was necessary to have a place to keep them, and so they conceived the idea of raising by instalment subscription enough capital to open a store. There were twenty-eight of them, referred to ever since as the twenty-eight Rochdale Pioneers, and the most they felt able to pay was an instalment of two pence per week. Stories are told of the sacrifices even this small payment involved on the part of some of them. But at last each of them had contributed one pound to the fund and this gave them a working capital of about \$140. With this they opened their store in Toad Lane, Rochdale, in 1844, stocked with a very limited supply of dry groceries, open one night a week and attended by some one of their own number. The story has it, and it is quite easy to believe, that on the evening of their first opening they were jeered and laughed at and unpleasant missiles were thrown at their windows by their fellow-workers who had not caught the vision of the pioneers and who regarded them as a crazy set of fellows ambitious to get out of their class and become shopkeepers.

But the most notable feature of this infant enterprise was the set of rules they adopted. First, they would charge themselves the same prices that other stores were charging. They did not want to stir up any unnecessary animosity from the neighboring dealers by appearing to cut prices. Second, after bills and expenses were

paid, any surplus remaining, ordinarily called profit, was to be returned as dividends to the members, not in proportion, however, to the amount of share capital held, but in proportion to the amount of their purchases. Third, interest on capital was to be treated as an expense. Capital, being stored up labor, was deserving of its wage at the prevailing rate for a safe investment, but no more. They did not subscribe to the theory of the early socialists that interest was immoral. Nor did they believe that capital, an inanimate thing, should receive all the profits arising from the activities and patronage of living beings after paying to labor the lowest wage it could be forced to accept. Fourth, each member was to have one vote in the control of the affairs of the society regardless of the amount of share capital he might hold, and there was to be no voting by proxy. The obvious purpose of this was to prevent a designing few from gaining control for selfish ends. Fifth, their sales and purchases were all to be for cash. It was unjust to him who paid cash to sell to another at the same price on credit. Losses from bad debts would reduce dividends, accounting would of necessity be more complicated and expensive, besides which cash discounts on purchases, which were a consideration in lowering costs, could not be taken advantage of if they sold on credit. This has been a cardinal principle of the coöperators throughout, although some societies have not adhered strictly to the ideal and those that have got into trouble have done so most frequently from violating this rule.

With capital so limited and with inexperience so vast the little store had its inevitable difficulties, but it survived and finally prospered and so sure were the benefits its owners had realized that they wanted to extend them to others of their class, and so they voted to put aside out of surplus, before declaring dividends, a fund for educational purposes and thus, with their help and guidance, more stores of the same kind were opened in neighboring communities. As time went on these stores began to pool their purchases through buying agencies, on the same principle the Pioneers followed in the beginning with their first sack of flour, until in 1864 they decided to open a wholesale depot at Manchester. They had for twenty years now been saving for themselves the retail profit on what they bought; from thenceforth they would add to this the wholesaler's profit. To raise the necessary capital, each retail society participating was required to subscribe to shares in proportion to the number of its

members and each society was given a proportional vote in the affairs of the wholesale organization, based also upon the number of its members. The payment of interest on invested capital, the fixing of wholesale prices and the distribution of dividends on purchases followed the same principle as that described for the retail societies, each retail store paying the regular wholesale prices and receiving its dividends and interest on its invested capital, these, in turn, to be included in its reckonings with its own members.

Up to this point the only opposition the movement had encountered was from the small retail merchant. He was the one whose ox was being gored and he made it as hard for the coöperators, wherever they appeared, as he knew how. Those of larger affairs, the wholesalers and manufacturers, had regarded the movement as a commendable effort on the part of the workingman to be thrifty and improve his circumstances. But when he became so ambitious as to open a wholesale establishment—that was entirely a different matter. Then he became a nuisance and had to be stopped at once if possible. Certain manufacturers refused to sell to the wholesale society because their jobber customers threatened to boycott them if they did. The coöperators were apparently not discouraged by this for they were by now able to raise any amount of capital that they needed, and so they opened and equipped factories of their own in lines where they had difficulty in obtaining supplies. These factories became departments of the great Coöperative Wholesale Society; and thus not only the wholesaler's profit but that of the manufacturer as well was added to the savings of the coöperators. Line after line of manufacturing was invaded in this way by a steady and progressive program, until the great wholesale society had become the manufacturer of almost every article that was needed for comfortable living. Later the tea monopoly gave them trouble and they went to Ceylon, bought large tea estates and began raising and curing their own tea. They have acquired many large estates in England, Scotland and Ireland, where they farm the land and use the old manors as convalescent homes, vacation retreats, a kind of country club for their own members. They have small coasting steamers, which, before the war, went to Mediterranean ports and as far as Spain for the products of those countries, chiefly small fruits to be made into preserves and jams in their own mammoth canning establishments. They were not satisfied with

their supply of vegetable oils for the manufacture of soap, so they bought a great tract of land on the Guinea coast where they produce their own oil and grow tropical fruits besides. For years they have had their own grain elevators in Canada, and within the last eighteen months they have bought between ten and eleven thousand acres of wheat land, under cultivation, in the province of Saskatchewan, western Canada. They have buying agents on the produce exchanges of every great producing country of the world. Mr. John Gledhill, their representative on the New York exchange, purchases for them between ten and fifteen million dollars worth of American foodstuffs every year, their representative at Montreal also purchasing very large amounts. They have become the proprietors of a coal mine connected with which is a line of railroad. They have upwards of three hundred million dollars invested capital, a yearly turnover of more than seven hundred millions of dollars and many thousands of employees, almost all of whom are members of the retail societies. There are more than fifteen hundred retail societies, having a membership, in round numbers, of three million persons. These are supposably heads of families. Counting five to a family, there would be fifteen million people in the United Kingdom now enjoying the benefits of consumers' coöperation. As the last census gives Great Britain a population of about forty-seven million, it will be seen that a third of the people who live there are coöperators.

What will be the result when a majority of the population shall have entered the movement? Business of the old kind will have to capitulate. It could not continue without customers. There will, more probably, be a gradual amalgamation of the old with the new, and eventually all business may be conducted under the system established by the coöperators.

When the war started in 1914 there was a great fear in England, amounting almost to a panic, that there would be a scarcity of food. Those who had the means began to buy in greatly increased quantities in anticipation of a famine. Prices began to rise and this but added to the determination of those who could to fill their cellars with supplies for the future. Those not able to follow this course must have been in despair. Retail merchants were taking advantage of the opportunity to make large profits by boosting prices on any pretext that seemed at all plausible. The retail stores of the

coöperatives continued to sell at the old prices, which resulted in such an increase of patronage that the managers of some of them became anxious and communicated with the executive committee of the wholesale society as to available supplies. An inventory of the great storehouses of the wholesale society was quickly taken, by which it was determined that there was a supply of most edibles sufficient for four months at their regular rate of consumption. The retail societies were advised to continue without increasing prices, which they did. But in a few days it was seen that their four months' supply would be quickly gone so excited and feverish was the demand, and it was therefore decided that no sales would be made except to members of the societies. The result of this ruling was a sudden and enormous increase in the membership and the further restriction had to be adopted by the coöperators, with great reluctance however, as it seemed contrary to their principles, that no further new members would be admitted until conditions had returned more nearly to normal. Real scarcity and disturbances incidental to war have since forced up some prices even to the coöperators, but their members did not at any time have to pay panic prices; and the later reopening of their books for new members not only greatly increased their membership, but had a powerful influence in making private merchants return to a reasonable level of prices.

So reasonable were their prices, so readily could their great wholesale establishments furnish vast quantities of clothing and shoes and bedding and other things needed in the equipment of soldiers, that they quickly came to correspond to a great commissariat of the government and in the first days of mobilization, when the government was puzzled where to find sufficient means of transportation, they came forward with hundreds of automobile trucks and thousands of draft horses, placing them at the disposal of the Minister of War. Here it will be seen that a democratically organized body of working people, by intelligent direction of their combined purchasing power, were able not only to avoid paying exorbitant prices for their own food and other necessities, but to do much to protect the rest of the public from extortion and at the same time, in a crisis, to come to the rescue of a great government by supplying at normal prices and on a vast scale things needful for an army of thousands. Does not this begin to make it clear wherein lies the application of consumers' coöperation to the lowering of food costs?

It would be interesting, did space and time permit, to study their great banking department by which the coöperators obtain credit at cost, the insurance department, the housing department, very much like our building and loan associations to which many members send the dividends on their purchases in order to pay for a home, the educational and recreational activities that have grown up with the movement and made of every retail store, with its meeting room and rostrum, a social center for its members, furnishing a social life that was offered before only by the public tavern. It would also be illuminating to turn our attention to the functions of the great Coöperative Union, which is maintained by subscriptions from all the societies and which has charge of propaganda and the educational side of the movement, compiles statistics, maintains a bureau of lecturers, musicians and other artists, a sort of Chautauqua circuit for the entertainment, broadening and culture of the coöperators, which elaborates improved systems of accounting and maintains a corps of trained auditors for the use of the societies and which holds a convention every year and issues a voluminous report. But such an investigation would take us into details not bearing directly upon the lowering of food costs, which is our subject.

More pertinent is a brief review of what has been accomplished in some other countries.

In all the continental countries of Europe the movement has a good foothold and in some it is taking giant strides. In Russia there has been a phenomenal growth in the last four years, the necessity for economies during the war having apparently stimulated the formation of coöperative societies, the members of which are said now to number twelve million—representing sixty million consumers. The activities of the *Zemstvos*, or peasants' assemblies, have been potent in the promotion of this development.

Germany has a most highly organized coöperative movement with many societies of a great variety, grouping themselves under and making reports to several separate unions. By far the largest number of its societies are the *Raiffeisen* and *Schulze-Delitzsch* coöperative banks. These banks, themselves consumers' societies (consumers of credit), have been promotive of the formation of distributive societies for dealing in food and other necessities. There were seventeen thousand four hundred and ninety three such banks in Germany in 1910, having a turnover, money paid in and

out, in one year of \$8,275,000,000. In the same year there were two thousand three hundred and eleven distributive societies with one million, five hundred thousand members, having assets of \$40,000,000 and yearly sales of considerably over \$100,000,000. The German government has looked with disfavor on the coöperative distributive societies and has forbidden government employes to become members. Since the war, however, there are reports that many have defied this prohibition and joined anyhow, because of the many benefits, and without rebuke from the government.

In Belgium the movement is largely conducted by the socialist party, and instead of returning dividends on purchases, these are retained and are used for socialist propaganda. The movement started as a coöperative bakery, which has grown to great proportions, but, on account of its socialist affiliations, it was opposed by the church where the social interests and amusements of the people centered. The socialists, to offset this, started recreational community centers on a coöperative basis, the largest of which is "The House of the People" at Brussels. Out of these it was possible to organize store societies, and the movement grew. There are now also coöperative societies under the auspices of the church. There are, or were, in Belgium many coöperative peoples' banks, after the systems of both Raiffeisen and Schulze.

The Swiss movement is so strong that it has taken over the meat monopoly by purchase, and has entered into a fight against the chocolate interests which are very strong and inclined to be dictatorial.

In the far east Japan is not behind, with over twenty-five hundred consumers' societies in 1909, if credit societies be counted. Of the latter there were over eighteen hundred and much growth has taken place since then.

Many of these countries have more or less perfectly organized bodies or unions to which the societies report, and these unions in turn report to the International Coöperative Alliance, which is an international propaganda body for the promotion of coöperation throughout the world, and whose affiliated societies represent between fifty and one hundred million people. It publishes regularly a bulletin giving the progress of the movement, which is a reliable source of information on the subject. Its headquarters are in England.

In the United States less progress has been made than in Europe, but it will probably develop very rapidly when a good start has once been made. The Agricultural Department at Washington has recently interested itself to make a survey of the consumers' societies throughout the country, but its conclusions were not very encouraging. They found about four hundred stores, many of which were not thriving. The Coöperative League of America, with headquarters in New York at 2 West 13th Street, which is a purely educational organization whose purpose is the spread of coöperative propaganda, after a fairly thorough investigation found five hundred stores and believes there are many more that do not take the trouble to answer inquiries. They would estimate the number at one thousand, although all these may not be strictly following the Rochdale plan. There have been many failures. What may be stated as the general causes of failure, everywhere, are insufficient capital, inefficient management and injudicious credits. Other causes, in America, are the lack of homogeneity in the population and the disposition, especially among workingmen, to move frequently. The European coöperators have in large measure overcome the general causes by more perfect organization through their unions, which evolve better methods, supply auditors and conduct a constant campaign of education for instilling the coöperative spirit which makes for greater loyalty and unity of purpose. They also have the advantage that the people in each country are more alike in tastes and modes of thought than in America, and for the most part they remain generation after generation in the same location, thus giving time for accumulation and for an appreciation of the benefits from coöperation.

Though the American coöperators have not so far formed a union, their efforts having been sporadic and widely scattered, the Coöperative League of America is doing much by correspondence, by its literature, by its monthly publication, *The Coöperative Consumer*, and by maintaining field workers and lecturers, to bring the various, unacquainted groups together, to give them some knowledge of each other, to teach them the possibilities of further coöperation in a wholesale movement and to develop a sense of loyalty to the idea and a deeper comprehension of its meaning.

In conclusion let us put our subject in the form of a catechism, as follows:

Question: What can coöperation do in lowering food costs?

Answer: Consumers' coöperation can remove every motive for keeping up food prices and make it to the advantage of every human being to use, to its fullest capacity, every device that will increase the yield of the good things of the earth and that will distribute them quickly, easily and cheaply to those who would use them.

Question: What is coöperation doing in lowering food costs?

Answer: Consumers' coöperation in many parts of the world is not only eliminating the profits of all middlemen, but it is improving methods of production, thereby increasing the yield and is giving to the consumer absolute certainty that the quality and the quantity of what he buys is as it is represented. In consumers' coöperation it is to nobody's interest to follow any other course.

The application in America of the principles of the Rochdale Pioneers is behind other civilized countries and every effort, such as is being made by the Coöperative League of America, to bring about a clearer understanding and a more general and successful adoption of these principles, should be encouraged and supported by everyone who has faith in a more just and a more efficient economic system.

PRICE CONTROL THROUGH INDUSTRIAL ORGANIZATION

BY J. RUSSELL SMITH, PH.D.,

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Some persons have been inclined at times to smile at the distinguished iron master whose name adorns so many libraries, but I regard Andrew Carnegie in the light of an economic prophet, for he declared years ago that we were coming to the time when we would have a supreme court of prices. If ideas have something of an environmental origin, it is perhaps not unnatural for Mr. Carnegie to come to such conclusions after contemplating the sale for hundreds of millions of certain iron properties that cost scores of millions. Mr. Carnegie's supreme court of prices is here embedded in our states, as witness the Interstate Commerce Commission. That it is also deep in the common mind is shown by the repeated attempts to create a Federal Trade Commission. Although that organization is still feeble and almost toothless, after the manner

of beginners, yet the occurrences of the past two years show that it has promise of long life, great growth, and far-reaching influence. For price regulation, like many other forms of industrial control, is here to stay.

The necessities of price regulation have made Woodrow Wilson, who calls himself a democrat, recommend and fight for legislation so sweeping that it would surely make Thomas Jefferson rule him out of the party, and yet we know from the experience of the last twenty years, illuminated by the experience of the last two years, that the needs of the people compelled even this supposed apostle of states rights, this priest of the doctrine of little government, to ask these powers for the federal administration and to use them. He had no alternative but to ask for price control.

Price control is coming by two methods: one the legislative—administrative control, now very much in the public mind; and the other, industrial organization which lacks some of the dramatic appeal of the cudgeling of rascals over the head, but despite this limitation it has great possibilities as a real price reducer.

Organization is a new concept to the American, one that does not inhere in the nature of democracy. It took the Germans to show us what organization is. We now know the difference between a mob, a body of militia and an army. Each is a group of men, but the militia is far superior to the mob. We have also found out that it takes the militia months of diligent training to become an army, and when it has become an army all it does is to have a great group of men put certain objects in certain places at certain times. That description also happens to cover the process of supplying a city with food; namely, a great group of people putting certain objects in certain places at certain times.

Owing to the poor things we will put up with in times of peace, we may justly say that American food production and particularly American food distribution are in the mob stage rather than in the militia stage of organization. Behold the distribution of goods in a city! In the early morning sleep is disturbed by a mob of milkmen traveling one after the other through the same block, each leaving his contribution of bottles on the different doorsteps. During the forenoon a mob of grocer wagons rattles through the same street, their places to be taken in the afternoon by a similar mob of department store delivery wagons. With the din of this wasteful

confusion still in our ears, we wonder in the evening why the cost of living is so high. We haul food a thousand or two thousand miles, past untilled lands, and then wonder why we have a car shortage and why it all costs so much, and why the quality is poor.

We have an industrial organization based on individualism and profits rather than upon service, and as socialism looms above the horizon the champions of individualism denounce it. I am here to urge them to cease denouncing and construct, and I am here to warn them that if they do not construct, the socialists will certainly try it in ways which to the average individualist are quite terrifying.

The present English situation is a neat compromise between socialism and individualism. They found that the price of ships was becoming unreasonable, so the government took over all British ships at a comparatively low but profitable rate per month and handed them back to owners to operate for the government. The British found the price of bread was becoming unreasonable, so the government buys all the wheat, hands it over to the importer, telling him he may make so much profit gross on it. The importer sells it to the miller to whom the government grants the privilege of a certain other gross profit, and so on down the line. Thus when the loaf of bread is found to cost too much, the irregularity is traced, and woe to the man who is found profiteering beyond the allotted amount. An English farmer was fined \$5,500 the other day for selling his potatoes above the proper price. It is comparatively easy for a government to say to a wheat importer that he may sell wheat at 1 cent or 2 cents a bushel more than the government charged him for it. That is industrial control. The real business, the industrial organization, is still in the hands of the individual importer. He hires and fires, sells and collects, repairs and sweeps up. The government has dodged these bothers of administration.

I wish to point out the service of industrial organization as a factor in possible price reduction.

What is there for industrial organization to do in reducing the price of food, and how can it be done? I will cite the investigations of Mr. A. B. Ross in the Altoona food situation. In trying to work up an outlet for the produce of a nearby county, he succeeded in getting a fairly authoritative food survey for the city of Altoona which revealed the surprising fact that 80 per cent of the perishable produce was hauled fifty miles or more by train to a small city sit-

uated in the midst of undeveloped agricultural territory with a great variety of soil resources, and with a farming population sure that there was no market and that farming was not much of a business. During this investigation this characteristic and instructive episode was unearthed.

A Bedford County farmer had hauled a barrel of apples to his station and shipped it by train to Altoona. There it was put upon a dray and hauled to a commission merchant's place. After keeping it for a few days the merchant paid a price for it, hauled it to the station and shipped it to Pittsburgh. It was again put on a dray, taken to a commission house, again sold and again hauled back to the station, put on a train and shipped back to Altoona, carted to a commission merchant's store, sold to a retail grocer, who hauled it to his store, broke it open and delivered the contents in many small lots to his customers. Four sales, six cartings, three railroad journeys, and all on one barrel of apples—not very good apples either.

It is not unnatural that the farmer who shipped that barrel is inclined to think evil thoughts of middlemen and railroads, yet it was not necessarily the fault of any one of them, but the fault of a very vicious system that dates back to the day of hoop skirts and negro slavery. This inland town of Altoona with 58,000 people, mostly artisans, with 80 per cent of its perishable goods coming by train, often long distances, is supplied chiefly with stale and therefore tasteless, unappetizing and partially inedible vegetables. This fact, which is typical not only of the small town, but also of the great city, helps to explain why the way of the vegetarian is hard. Go to a restaurant and order a few meals, and you will find that about the only things you can eat are bread and meat. The poverty of our vegetable supply and its poor quality, explain why this nation finds it so hard to give up the meat diet, even though at the present time the prices are past anything in our record and with no permanent relief in sight. It is indeed unfortunate that there is no immediate or ultimate prospect of any substantial increase in the meat supply, but the economic facts of the country have so decreed. It is easy to prove that between eight-tenths and nine-tenths of the American farm produce goes to feed the beasts. Our agricultural area is nearly static, the population and the demand for meat are increasing, and few people think that even all the authority of the

war food administration can materially affect the price of meat. It is exceedingly suggestive to note the first great service of the food administration—the case of bread. This great act was to guarantee the farmers that the price of wheat shall be high—\$2.00 a bushel next year.

With a large and increasing population and a consequently large and increasing demand for food, with the high price of bread and the high and increasing price of meat, we are compelled to seek the vegetable diet. Fortunately the possibilities of vegetable production, unlike those of meat or of wheat, are indefinite in extent. The yield of these plants is heavy, and we eat the product ourselves rather than feed it to our beasts, so that a small acreage suffices. We could raise five times as many potatoes without materially affecting the area for the production of any other crop. As to peas, beans, cabbages, beets, and all the rest, there is a possibility of many fold multiplication of output. *The bane of truck growing is agricultural overproduction.* The fear of the truck farmer is the glutted market. There is scarcely a year goes by that the farmers of New Jersey do not leave peas unpicked in the field and plow under beans, while in the aggregate the annual waste of vegetables in this country would almost feed a second-rate European power. That waste goes on even this year. The orchardist fears to extend his plantings for fear he cannot find purchasers for his fruit. Even in this year of scarcity, cabbages day after day have sold for less than cost in the markets of Philadelphia, despite the free advertising of the local food commission, and fruit has rotted on the ground. With all this scarcity of meat and possible abundance of vegetable food, the average small town is poorly supplied with stale and unattractive vegetables. Here is a field for some industrial organization.

Now note the picture of what might be. There is no reason whatever either in scientific knowledge, in the physical conditions of production, or the facilities for shipment, why we might not have in every town that is a local market some kind of an organization to render the following service: (1) establish standard varieties of market vegetables to be grown in that locality, so that in that market town packages of beans, peas or cabbage could be made standard packages, but made up if need be by the contributions of a dozen farmers. In Denmark, probably the world leader in rural organization, their famous bacon is grown on a standardized pig.

This marvelous animal is a certain cross of breeds being grown by thousands of farmers, fed in approximately the same way, slaughtered at the uniform size of maximum efficiency for food consumption, cut up and cured in the prescribed way so that a piece of Danish bacon is a piece of Danish bacon, and you can buy it with your eyes shut. Similarly the Countryside standardizing plant of the United States should be able to pack the produce of a hundred gardens from a hundred nearby farms or backyards, freely commingling them if need be, and put up standardized packages of peas, beans and beets of the same variety, picked in the same degree of ripeness and thus acceptable in any market to which they could be easily sent. This standardizing house with its standardized package is merely a copy of what has been done for years in California, to the great success of orange growers and the great increase in the consumption of that wholesome fruit.

From this standardized packing plant all the stores of the town of Countryside and all housekeepers who wanted a whole package would be supplied with the freshest of good produce. If a surplus remained it could be shipped to nearby markets. If other markets were not available, as at times they are not, an adjunct to the standardizing plant should be canning equipment and drying equipment, so that no food should be wasted. Thus the inhabitants of the borough could be supplied through the winter from their own good fresh produce, prepared in their own local plant by the most scientific and hygienic methods and no freight to pay. Any surplus thus preserved in excess of local needs could be marketed at the world's leisure. We should have 5,000 little towns each thus fed with good fresh, home-made vegetable food from its own local plant. It would eliminate the waste of vegetables so common in farmers' gardens, for the farmer is not in a position to handle small surpluses. It would eliminate waste of labor by greatly reducing railroad freightage, it would reduce waste of work and lumber by saving the making of thousands of packages. It would reduce waste of labor and money, for middlemen's work and profits would not need to be paid. It would reduce the price of meat, because people would have more abundant and satisfying supplies of substitute foods. By giving to the farmers around every population center the local market for twelve months in a year, it would aid greatly in the intensification of our agriculture and in its fine

adjustment to need. We are at the present time a nation that is freight car crazy. We are also crazed by freight car shortage. Next year it will be worse. Here is a way out. Such a point-of-origin standardized plant would give the small town its natural and proper advantage of a lower cost of living than any great city could rival.

The second part of this plan is an efficient and honest information service which will enable both shippers and purchasers to know the supplies and demands. At the present time we have a perfect chaos of effort in seeking information concerning markets, and also a chaos in the supply of markets, so that one market is glutted, with the result of disappointed farmers, while another reasonably nearby market is starved, with the result of equally disappointed would-be purchasers. For example, this summer good peaches sold at from 40 to 60 cents a basket near Bordentown, N. J., while at the same time similar fruit was bringing \$2.00 a basket in north Jersey towns suburban to New York. A proper information service would have had the cheap peaches in the high-priced market, with the result that prices would have been somewhat higher for suppliers and somewhat lower for purchasers; all parties would have been satisfied, consumption would have been increased and likewise production. It may be of interest to know that an attempt to establish such an information system in one of our largest eastern states was killed by commission men, although it is probably easy to show that it would have been to their advantage.

I do not wish to claim originality for these plans. They were worked out by Mr. A. B. Ross, now with the Pennsylvania Public Safety Committee, in the process of his attempts to solve some very distressing conditions of badly fed towns and poverty stricken farmers hardby. Why do we not have it? There are four reasons: (1) the American farmer lives in a mental burrow and is the fiercest of individualists, while the plan that I have described necessitates that men shall coöperate; (2) the American townsman, despite the fact that he eats three times a day, thinks food supply is the farmer's problem, when really it is a town problem and he is about as set an individualist as the farmer; (3) the United States Department of Agriculture, for reasons defended by any social economist, thus far does not take hold of such work; (4) most of our state departments of agriculture and our state colleges and agricultural extension service are equally shy of this constructive work.

Perhaps the shyness of state and national government could be explained if we could read the full history of lobbying and appropriations. Put yourself in the position of a bureau chief whose work depended on appropriations, and it is easy to see why he should hesitate to start things that would get all the middlemen of the country out to kill his appropriations. Meanwhile the need accumulates, and we have an unexampled opportunity in the present need and the unusually widespread desire to be of service. Here is a possible good result of the war.

This war is a terrible thing, but, like most misfortunes, it too may have a silver lining. The world is getting new concepts of public necessity and the way to meet it. If styles are not right, we change them. Not long ago someone had the notion that the ladies would look better with large, wide-flowing skirts, but suddenly a person in Washington, a person of thought, saw that this was going to cause world suffering from a wool famine. A brief international interview took place, and behold the lady is to look different. Her skirt is to continue short, and be exceedingly narrow, using little wool. Does steel go to make fences for game preserves, to make the skeletons of more hotels at pleasure resorts, to make limousines for the parkway? In England the answer is emphatically "no." The nation needs steel for three things: munitions, warships, merchant ships. No one else can have a pound unless he proves his need to the Ministry of Munitions which has control of the steel industry. We will be shortly in the same position if we do our part. Does a young man do as he pleases, go to college, play golf, take a job, marry a wife? No, it is decreed that the nation needs him in the army, and to the army we send him. When this war is over we are not going to lapse back to individual chaos. Instead of this the concept of public need and the utilization of a nation's resources to meet it will be applied as never before. One of the ways will be the development of rural market organizations which will give us cheap and abundant supplies of vegetable foods, a class of production that even our food administration in war times scarcely thinks it is possible to affect with all the authority at its command. It can only urge individual action.

The bringing of such market organizations to pass this winter in preparation for next year's business is the peculiar opportunity of Public Safety Committees and other voluntary war service organizations.

PRICE CONTROL

BY JOSEPH E. DAVIES,

Federal Trade Commission.

Prices all over the world during this war have risen, and very rapidly. This is not a local phenomenon or manifestation. It is world-wide. The price of coal in Norway, the price of foodstuffs in Italy, the price of silver in China, the prices of all commodities the world over have appreciably increased. One of the fundamental reasons, perhaps, for this increase in prices is found in the fact that the measuring standard of value—money—has greatly increased in volume. Nations have been obliged to issue large volumes of paper money. Credits have taken the place of money to an appreciable extent. The inevitable consequence is an increase in the prices of commodities whose value they measure.

There are additional reasons for increases in prices. There have come great and abnormal demands for certain commodities. The great war has consumed enormous quantities of materials in its processes of destruction which heretofore were not demanded for that particular use, or lack of use, but which were used in the ordinary processes of industry and trade. The demand for basic commodities has greatly increased. With reference to a great many commodities there are physical limitations in increasing production. It takes a year and a half to build a paper mill or twelve months to build a steel mill. The increase in the supply has not kept pace with the increase in demand. Prices register this condition.

Thirty million men, or more, have been taken away from production and have been engaged in the destruction of property. Not only have the sources of supply been curtailed, but the available supply has been consumed in non-productive forces. Under such conditions it is inevitable that prices should rise.

Whenever in the history of the world such a situation has come, men organized into communities or governments have tried to prevent the hardship that accrues. Governments cannot prevent the workings of economic laws, but government seeks to prevent the cupidity of men from taking an exorbitant profit out of commodities whose value has increased entirely because of abnormal conditions. With the supply limited, governments have sought to pre-

scribe how that supply shall be distributed, and at prices which are based upon costs and upon such fair values as obtained before the rise of unusual and abnormal conditions.

The earliest instance of price fixing historically, I presume, was biblical. The Emperor Diocletian in Rome, three hundred years after Christ, tried to fix the prices of various commodities and the prices of labor. Sixty years afterwards the Emperor Julian tried the same thing. During the French Revolution the English fleet blockaded France, foodstuffs fell off in production, there was a great demand for food, prices went up and the French government attempted at that time to establish fixed prices and fixed the law of the maximum which, after a very brief trial, was suspended in its operation.

Recently, Germany has made the most elaborate and intensive effort to control prices. The results we will not know with definiteness until the conclusion of the war. France followed; English colonies early embarked upon the plan; England itself was the last to attempt it. We are now embarking upon a similar effort. In fact, there isn't a neutral or warring nation in the world that has a conscious, deliberate intent to serve the interests of its people but that is addressing itself to this problem and trying to control price.

Economists have always maintained that this was impossible; that it was unsound to attempt it; and that it was foredoomed to failure. It is characteristic of man that in the process of his evolution he will not admit that failure is foreordained where the general welfare of society is concerned, and it remains to be seen whether under present conditions as to production, transportation and distribution, with modern intelligence, this situation can be successfully worked out.

Our present situation is briefly this: legislation has been passed looking to fixing prices for government purchase generally and looking to the fixing of prices for the public as to food and fuel. The National Defense Act and the Naval Appropriation Act gives the President of the United States power to fix the price at which materials shall be taken for the use of the government. It is maintained that this power applies only to the purchase of those commodities which are used directly in military activities for ourselves or for our allies, steel for warships or projectile steel for shells, or lumber or coal for ships.

There are others who maintain that under this power the President might extend this to the possible fixing of all prices for the use of the general public.

The only specific legislative authority to fix prices for the public thus far, however, is found in the so-called Lever Act which has to do with food, fuel and agricultural implements. Senator Pomerene has introduced a resolution which is now before the Senate and which aims to bring about the same control over the price of steel and other commodities as obtains over the price of fuel and food. With the government of the United States—a large purchaser—taking out of the lumber and steel markets or any of the basic markets a large quantity of material for war purposes, there follows a manifest effect upon prices. The available supply for the business and commercial uses of the country is that much diminished. In a market already hectic with demand the introduction of such an additional large buying factor forces prices still higher.

Prices in the market at the present time are, generally speaking, not dependent upon the cost of production, but are dependent upon the degree of men's needs and the competitive bidding they engage in to get the materials.

The Federal Trade Commission has been engaged for the past eighteen months with a large corps of accountants and investigators in ascertaining the facts as to costs of production of many of the basic commodities, such as steel, cement, aluminum, petroleum, fuel, oil, news-print paper and a great variety of similar commodities.

This was upon the direction of the President of the United States who, with characteristic foresight, concluded that it would be necessary for him and other government agencies to have accurate information of a definite, scientific character as to what the exact costs of production were, so that when the price was named, if it were to be named, it would be determined not upon hearsay, not perhaps upon the self-serving declarations of those who were engaged in that business, but upon the facts which had been determined by a government agency which had no purpose other than the disinterested one of serving the public.

One of the chief difficulties attendant upon any plan of price control is the varying costs of production. The outstanding fact in all industrial production appears to be quite generally that the low cost, highly efficient, highly integrated plant can sell and make a

profit at a price where the high cost, inefficient plant can't even produce the commodity.

The importance of that fact looms large when it is realized that production is equally important with price. The prices of commodities affect our immediate comfort and well-being. The question of whether we win this war or not affects living conditions for the long future, and equally vital therefore with present comfort in the matter of low prices and perhaps more vital, is the question of getting the material out and the fixing of a price that will bring the production. Materials are necessary to win the war. The price must be sufficiently high in order to get the material. Men will not voluntarily produce unless they make a profit.

The problem is then, briefly, to fix a price based upon the cost of production that will give a fair return in profit and will at the same time not starve production.

In official circles the methods of price fixing most discussed have been two. One, that a flat price be fixed, and that it be made such that it will enable the high cost producer to sell with a profit and at the same time insure a large proportion of the total production. The merit of this suggestion lies in its simplicity. It is put into effect by the mere declaration of the price. Its disadvantage lies in the fact that any such price so fixed will afford to the low cost producer a large profit, whereas the high cost producer will make a much less profit, and unless the price fixed is at a point so high that the least efficient can produce, some production will be curtailed. In England, steel prices have been fixed by this method for a large variety of steel products. Generally speaking, these prices as fixed were material reductions and are now about one-half in price of prevailing market prices for similar commodities in this country. The plan has been made effective by a system of licensing.

The other plan that has been discussed is that of the pool. It would contemplate the purchase of all production at varying prices, giving approximately the same percentage of profit to all producers and the resale of the commodity at a fixed price which would be based upon the average of all the costs. It would contemplate giving a larger percentage of profit to the efficient than to the inefficient, in order to stimulate efficiency. The merit of this plan lies in the fact that it would give the same profit to all and that it would insure the entire production because all producers would

be getting a margin of profit. The principal objection to the plan, and it is a serious objection, would be the difficulty of administration. It would require extensive administrative machinery and the closest coördination between such administration and the industry involved. With the outbreak of the war, England bought large quantities of sugar in the markets of the world, resold it to the consumer in England at a fixed price and assured that price through its control over distribution. Since that time a joint commission of England, France and Italy buys sugar and resells the same on a similar plan.

Up to this time materials have been purchased by the army and the navy at tentative prices fixed by the President and subject to determinations as to the ultimate price upon cost investigations conducted by the Federal Trade Commission under the direction of the President. As to prices for the public, the President fixed the price of coal on the twenty-first day of August for the various districts, and the administration of the situation is now under the able control of Dr. Garfield, the fuel administrator.

Upon the cost data which the Federal Trade Commission has procured and which has been submitted to the President, the War Industries Purchasing Board, with the approval of the President, has fixed a flat price for copper and has secured assurances from the industry that wages would not be reduced and that the price thus secured for government purchase would be projected and sustained for the general public. It is highly probable that a similar action will develop with reference to steel products.

It is probable that the general development as to price fixing by the government will at the outset follow the line of fixing a flat price, rather than by attempting to control price through pool arrangements. It is the moderate course and will naturally commend itself to government because of its simplicity. Any weaknesses which the situation may have within it will be developed and the processes of further control will be those of evolution through experience, rather than an immediate attempt to project a very large administrative machinery in a new field of effort.

Whether prices made for government purchase can be made effective for the general public by agreement between those in the industry and government officials without specific legislative authority to enforce such prices, remains to be seen. In spite of the dili-

gence and perfect good faith of those who have pledged their effort to preserve fair prices for the public, there is no doubt that the condition of the market is such that the greatest of pressure will be exercised to find ways and means of getting the commodity irrespective of price after it has left the control of the original producer. Of the good faith of those engaging to preserve these prices for the public there may be no doubt; of their capacity to project and preserve for any length of time uniform fair prices for the general public, there is room for doubt. It will undoubtedly be aided by the administration of priority under the direction of the very able priority administration which has been created.

BOOK DEPARTMENT

THE BUSINESS MAN'S LIBRARY

ACCOUNTING, AUDITING AND COST KEEPING

CHURCH, A. HAMILTON. *Manufacturing Costs and Accounts*. Pp. viii, 452. Price, \$5.00. New York: McGraw-Hill Book Company, 1917.

In this scholarly and complete treatise Mr. Church has set forth most of the fundamentals of cost accounting, and has given a complete outline of his well-known supplementary rate method of distributing overhead expense. The book is divided into three parts: part one is devoted to a general outline of manufacturing accounts; part two describes the mechanism of cost accounting, while part three treats of factory reports and returns, embracing reports for foremen, superintendents and executives.

The author has reduced all cost methods to three which he calls A, B, and C, respectively. He points out that method A will give accurate results if wages are uniform throughout the shop, and method B will take its place if wages or earnings per hour are not uniform. Method C is based upon the author's theory that departmentalization is the key to accuracy in cost accounting, and that the particular merit of method C lies in the fact that it carries the principle of departmentalization as far as the production centers themselves, i.e. to the ultimate limit possible.

Some question may be raised as to the wisdom of attempting to teach or explain the theory of double entry bookkeeping in the small amount of space allotted to this subject by the author in part one. In these days when the accounting profession is trying to establish a satisfactory terminology it is decidedly confusing to the average student to encounter the distinctions that the author makes between journals and books of original entry. One cannot but feel that it would have been better had the author adhered to modern accounting practice, insofar as it has been standardized, for the illustrations he uses to describe his cash journal.

The author comes in variance with the usual accounting practice in his treatment of the division of administration expense and the deduction of depreciation from the asset instead of creating reserve accounts. In his chapter on the inclusion of interest in cost, the author has established himself in favor of including interest and has outlined methods for treating interest as an element of cost in what he terms ordinary and "hard times."

The book is a notable addition to a library on cost accounting, and to the student who is well grounded in the basic principles of accounting it will prove of considerable value in treating of cost accounts.

A. T. CAMERON.

University of Pennsylvania.

ADVERTISING AND SALESMANSHIP

FARRAR, GILBERT P. *Typography of Advertisements that Pay*. Pp. xvi, 282. Price, \$2.25. New York: D. Appleton and Company, 1917.

Mr. Farrar's book is admirably adapted to classroom work because of its good arrangement, well-chosen illustrations, and its simple manner of presenting technical material. The book is prepared on the justified assumption that advertisers should know clearly certain technicalities of printing, but, at the same time, that they should not burden themselves with too much detail. In accordance with this theory, the author sets forth in an effective way the few families of types that are in common use. He shows how different combinations of type faces can be made for the best results. A peculiar virtue of the book is that these type faces are placed in close relationship to the advertisements that employ them. An excellent chapter is that entitled Putting the Advertisement Together. It shows at a glance how an advertisement is prepared for the printer. The chapter on Making the Message Quick and Sure is a most excellent treatment of the employment of types for the essential purpose of making clear what you have to say. Other valuable chapters in the book treat of combining pictures and type faces, borders, the field of hand lettering, white space and margins, adding life to package display, and the kinds of advertisements, the last named chapter being an illuminating classification of advertisements which cannot fail to be of service even to experienced advertisers. Many other books on the typography of advertisements have been written, but for simplicity of treatment and arrangement and for presentation of the essentials in typography this book fills a needed place.

J. W. PIERCY.

Indiana University.

GOVERNMENT REGULATION OF BUSINESS

MONTAGUE, GILBERT H. *Business Competition and the Law*. Pp. vii, 318. Price, \$1.75. New York: G. P. Putnam's Sons, 1917.

STEVENS, W. H. S. *Unfair Competition*. Pp. xiii, 265. Price, \$1.50. Chicago: University of Chicago Press, 1917.

A mere mention of the trust problem, and more particularly the Sherman and Clayton Acts, at once is likely to engage the interest of a business man. It is quite superfluous, therefore, to bemoan a lagging interest in the subject matter of these two books. On the other hand, both works contain the elements of inspiring essays. They are phrased in a colloquial style and their manner of expression is simple and natural. What is more noteworthy, they represent lucid treatments of subjects of which their authors have an intimate technical knowledge.

The attitude of the authors toward the problems of current industrial and commercial practices is different. Montague has a proclivity to maintain the right of a business to live without too much molestation on the part of the courts. At the same time he suggests the legal pitfalls into which a business may unwittingly step, and thereby bring upon itself an unpleasant acquaintanceship with the Federal District Attorney's staff. The substance of Montague's thought is developed by relatively brief passages of his own pen, coupled with rather elabo-

rate quotations of actual decisions rendered by the courts. It is the somewhat too numerous citations from these decisions that make his work a trifle monotonous at times, and yet, unfortunately, no means has been devised by lawyers for satisfactorily paraphrasing the law. Stevens reasons from the standpoint of economic justice. Once having propounded the "competition theory of monopoly," the justice of competitive business practices are resolved according to the rule that the "final test of the fairness of a given method should be whether or not it restricts actually, or potentially, the normal operation of the law with the resulting survival of efficiency."

In substance what Stevens terms the "competition theory of monopoly" is based upon the principle that competition is fair and just so long as society accepts and countenances it. "The interests of society lie in the highest possible utility at the lowest possible cost. . . . To secure this result it is necessary that efficient units of organization shall be preserved; and it is equally desirable that inefficient units shall be destroyed. In other words, an organization is entitled to remain in business so long as its production and selling costs enable it to compete in a free and open market. As the productive and selling efficiency of one or more competing concerns in any line of business increases beyond that of others, the price of the goods sold tends correspondingly to decline. The more efficient organizations reduce the price in an endeavor to increase their volume of sales, expecting more than to compensate for the decreased profit per unit by the larger number of units sold. Generally, marginal concerns will gradually lose their market. Ultimately, if unable to reduce or hold their costs below the market price, they will be compelled to discontinue business."

It is patent that Stevens is not a proponent of large industrial combinations simply because they are large, and he carries the convictions of one who has investigated carefully the methods by which, fortunately or unfortunately, big business has grown. The logical soundness of some of his assertions is tinged by a super-vigilant search for recondite motives on the part of business; but he is not unfair.

In short, Montague's work illuminates the path of legal safety for business in a semi-legal fashion, while Stevens explains in a practical popular way the means, and the results thereof, pursued by monopolistic combines. Each book is complimentary to the other, and both are deserving of the shelf of the business man's library.

FRANK PARKER.

University of Pennsylvania.

INSURANCE

GEPHART, W. F. *Principles of Insurance*. Vol. I, *Life Insurance*. Pp. xi, 385. Vol. II, *Fire Insurance*. Pp. xi, 332. Price, \$1.50 each. New York: The Macmillan Company, 1917.

Volume I is a revision of an earlier work by the author entitled *Principles of Insurance*, while Volume II is an entirely new work. More extended reference will therefore be made to the latter.

The volume on life insurance is on the whole a contribution to the subject, the various topics being carefully arranged and the exposition clear. Some criticism

might be made of the elementary treatment of certain phases of the subject but a text is not supposed to equal a treatise in this respect. One may seriously object, however, to the issuance of a revised edition which does not follow the progress in the business in certain directions. Thus in the chapter on Insurance for Wage-earners the author discusses compensation laws but includes in his list of the same only twenty-three. One is at a loss to understand why employers' liability insurance is discussed in the chapter on Insurance for Wage-earners.

The volume on fire insurance appears to possess certain serious defects as well as commendable features. The strongest criticism which can be advanced, viewing it in the light of a text, is its seeming lack of plan and arrangement of chapters. It is difficult to account at times for the appearance of apparently closely related or identical topics in different places, the subsequence of certain principles whose knowledge is prerequisite for other subjects and the brief treatment accorded particular portions of the study. Some explanation is also required of such statements as, "local associations of underwriters have little actual power over rates or commissions" (p. 69).

This second volume has, however, certain distinctly commendable features. Prior to his work no adequate description of some of the more recent developments of the business was available. He has therefore rendered a service in producing a relatively up-to-date textbook. Secondly, he has incorporated to a greater degree than any other writer a discussion of fire insurance from the social viewpoint. In his chapter on the relation of the state to insurance he has discussed several issues which are now and in the near future will be very important in the conduct of the business.

ROBERT RIEGEL.

University of Pennsylvania.

LABOR LEGISLATION

RHODES, J. E., 2ND. *Workmen's Compensation*. Pp. 300. Price, \$1.50. New York: The Macmillan Company, 1917.

Workmen's compensation, in the space of a few years, has developed from an academic theory to an accepted institution. The problem is no longer whether the principle shall be applied but to what degree and by what means.

This book presents a careful statement of the background and fundamentals of compensation and of its present status in the United States which should be useful as a basis for more detailed study or for a general survey of the problem. The author's criticism of present conditions is thoughtful and will offend neither conservative nor radical. Particularly valuable are the illustrative cases and the brief digest of the essential points of laws now in force.

R. H. B.

WEBB, SIDNEY. *The Restoration of Trade Union Conditions*. Pp. 109. Price, 50 cents. New York: B. W. Huebsch, 1917.

Mr. Webb reminds us of the government's promise to restore union conditions. He recognizes the impossibility of going back, and advocates a new settlement with the unions on the terms which will be fair and satisfactory to them.

Since Mr. Webb's booklet was published, the Reconstruction Committee of the British Cabinet and more especially the ministry of munitions have taken up the problem in a broad and progressive spirit. Some employers proposed a copartnership form of management which will admit all classes of workmen to a direct interest in the increase of output and will seek to lessen if not remove the sharp distinction between the employer and the workman. These proposals which are made by responsible officials and employers, if worked out, would present a fairly satisfactory solution of the problem which Mr. Webb discusses.

J. T. Y.

MERCHANDISING: WHOLESALE AND RETAIL

CHERINGTON, PAUL T. *The Wool Industry*. Pp. xvi, 261. Price, \$2.50. Chicago: A. W. Shaw Company, 1916.

In its field this book is unique, for it does not attempt to add anything to the existing large body of excellent material covering sheep breeding, wool growing, the relation of the tariff to the growth of these industries, or the technique of textile manufacturing, but instead concentrates upon the hitherto unexplored territory of buying and selling wool products.

After setting forth the essential differences between woolen and worsted, and explaining the history of these two branches of the wool industry, the author presents his real contribution to the literature of wool. He describes in detail the function and importance of wool merchants, selling houses, dry-goods jobbing enterprises, and department stores. He points out definitely the interrelations between methods of marketing and selling problems on the one hand and wool growing and manufacturing on the other. Style as a factor in making and selling cloth is amply demonstrated.

If one were searching for flaws in this work he would dwell upon the illogical arrangement of chapters, pointing out that those dealing with middlemen are interrupted by other chapters treating processes and sources of raw materials. He would find fault also that too many important facts are buried in footnotes and not incorporated and explained in the text itself. He might complain that too many of the facts are set down without emphasis upon their significance.

The majority of the readers of this book, however, will welcome it as a piece of fresh evidence. It does not contain materials stolen and garbled from other writers. Its author has gone to original sources for his facts, most of which were gathered from men in the trade itself and have never before appeared in print.

Politicians endeavoring to shape a tariff policy would profit by studying Dr. Cherington's volume, men engaged in the various branches of the wool industry might gain a perspective from it that they may otherwise lack; and students of economics should hail it as valuable material for their deliberations.

MALCOLM KEIR.

University of Pennsylvania.

MISCELLANEOUS

DAVIS, JOSEPH STANCLIFFE. *Essays in the Early History of American Corporations*. 2 volumes. Pp. xiii, 547; x, 419. Price, \$2.50 each. Cambridge: Harvard University Press, 1917.

Four essays comprise these two volumes, each essay being divided into several chapters. Volume I discusses Corporations in the American Colonies; William Duer; Entrepreneur, 1747-99; and The Society for Establishing Useful Manufactures, the first New Jersey business corporation.

In Volume II, which deals with eighteenth century business corporations in the United States, there are chapters upon Banking Companies; Corporations for Improving Inland Navigation; Toll-Bridge and Turnpike Companies; and Insurance, Water Supply, Manufacturing and Miscellaneous Corporations. The appendices contain a list of American charters granted up to the end of the eighteenth century. There is a full bibliography, topically classified. The author has done his work well. Although the preface states that "a well-rounded treatment" of the history of American corporations is impossible because of "deficiencies in the available data," these volumes make a distinct and welcome contribution to American economic history; they will be helpful to both historian and economist.

E. R. J.

VICTOR, E. A. (Ed. by). *Canada's Future: What She Offers after the War*. Pp. xv, 320. Price, \$1.50. New York: The Macmillan Company, 1916.

Fifty-two articles by eminent Canadians and an introduction by the editor comprise this book. The majority of the articles deal with the resources and possibilities of Canada. The grain industry, fisheries, the peat bogs, mines and mining, livestock, railway systems, manufactures, insurance, banking, dairying, lumbering and agriculture are taken up. In another group might be named the educational facilities, the work of the church, Canadian clubs, immigration, sports and pleasure, conservation of resources, art, literature, chemistry and the soil, etc. The articles in these groups are in the main carefully written by experts.

A number of articles by leading politicians, with a few exceptions, do not treat their topics with care. The Dominion Labor Minister discusses Labor Conditions after the War (p. 48) in a page and a half of platitudes. Alberta's Future (p. 248) is dealt with by the Premier in two pages of florid oratory. Many of the articles are too exclusively descriptive and avoid too carefully the problem of constructive proposals for the future; for example, those dealing with the church and education.

The book should prove helpful to those who look to Canada as a field for investment or settlement.

P. R. H.

ECONOMICS

KIRK, ALICE GITCHELL. *Practical Food Economy*. Pp. v, 246. Price, \$1.25. Boston: Little, Brown and Company, 1917.

MACNUTT, J. SCOTT. *The Modern Milk Problem*. Pp. xi, 258. Price, \$2.00. New York: The Macmillan Company, 1917.

This is another one of the recent books dealing with sanitary phases of the milk problem. The book covers practically the same ground as is covered by *The City Milk Supply* by H. N. Parker. It is a general study with no special contribution. The chapters on the analysis of the sanitary aspects of the milk problem are well done. The chapter on the economic factors is superficial and does not even cover the secondary material available to the author. There is some valuable material in the Appendix on milk statistics, grading systems, the North system, costs and prices, and milk products.

C. L. K.

NOURSE, EDWIN G. *Agricultural Economics*. Pp. xxv, 896. Price, \$2.75. Chicago: University of Chicago Press, 1916.

A more accurate title for this collection of valuable contributions would be *Source Book of Agricultural Economics*, since the author does not attempt to present what would commonly be looked upon as a textbook in the general principles of the subject.

The book covers practically the whole range of problems in agricultural economics, sometimes running over the line into economic history, technical or scientific agriculture, rural sociology, and indeed nearly every related field.

The author has selected from an extraordinarily wide range of original documents not only from every related field but from ancient to modern times. Some of the selections are from authorities of the highest standing and the quotations are standard, while others are selections from the agricultural press, bulletins, etc., and are at times of a popular nature.

J. L. C.

PARKER, HORATIO M. *City Milk Supply*. Pp. xi, 493. Price, \$5.00. New York: McGraw-Hill Book Company, 1917.

Formerly Health Officer of Montclair, New Jersey, and lately Instructor in Municipal and Sanitary Dairying at the University of Illinois, the author has had rare opportunity for intensive work along the line of adequate protection of the milk supply to the consumer. The book on these points may be regarded as authoritative.

The book is not entirely satisfactory, either in its analysis of production costs or of distribution costs. Possibly this analysis is not to be expected under such a title. However, the author has undertaken to give some facts as to distribution costs which are not inclusive, and he has not used all the available sources in this field. But as to other topics which the author presumes to cover, the book is most inclusive and authoritative, and will be a most valuable record for all those interested in accurate facts as to sanitary milk, its production, transportation, and inspection.

C. L. K.

POLITICAL SCIENCE

GOLDSMITH, ROBERT. *A League to Enforce Peace*. Pp. xxvi, 331. Price, \$1.50. New York: The Macmillan Company, 1917.

The aim of this book is twofold: to show why various agencies and forces such as pacifism, Christianity, organized labor, diplomacy, business, etc., have failed to prevent wars in the past, to answer the objections that have been made against the proposed League to Enforce Peace and to show that it is the most practicable remedy yet suggested for the prevention of wars.

To the chief objection that the joining of such a league by this country would be contrary to our traditional policy in respect to European alliances, the author replies that the League does not contemplate an alliance in the older and more objectionable sense of the term but merely a policy of coöperation for the preservation of the peace of the world. The United States has attained such a position of influence and leadership that it can no longer pursue a policy of isolation but must become a partner with the other great nations in maintaining the peace. If nations should hesitate to introduce reforms until they become certain that the reforms would be effective the world's progress would be hindered indefinitely. The time has arrived when the world must take measures to prevent if possible the recurrence of such catastrophies as that which we are now witnessing. The League to Enforce Peace has received the approval of many statesmen and leaders of practical thought in all countries. Why not give it a trial? If it fails, no harm will have been done; if it succeeds, the world will have achieved its greatest victory in the fight for civilization.

J. W. G.

SIMS, NEWELL L. *Ultimate Democracy and Its Making*. Pp. 347. Price, \$1.50. Chicago: A. C. McClurg and Company, 1917.

Viewing the achievement of ultimate democracy as a process of persistent conflict between aggregations of forces, the author appraises the contending forces in American society and foresees inevitable victory for Demos. But the democratic triumph requires a collective purpose in government to effect radical changes in existing social institutions and situations. Socialization of wealth initiated by government ownership of public utilities, public regulation of big business, and taxation to equalize wealth, together with a rigid restriction of immigration, will promote the production of economic equality. There remains natural aristocracy, at bottom as bad as any other aristocracy and a barrier to the realization of ultimate democracy. "Inequality of conditions, contrary to the doctrines of some Socialists, comes not primarily and ultimately for many from the present distribution of wages and wealth, but from an inequitable distribution of talent." Eugenic proposals tend to raise the average quality of the stock and to lessen the deviation therefrom. Democracy is advanced by the constantly accumulating experience in democratic government, the diffusion of the democratic idea, the urbanization of society, the spirit of the Scientific-Industrial Age, and the Universal Peace Movement. The Industrial Age by stimulating international class-consciousness sublimates patriotism and aids the warfare of national and world democracy against militarism, a tripartite tyranny of autocracy, aristocracy and

plutocracy, engaged in the exploitation of humanity. Professor Sims has written a thoughtful and spirited survey of significant tendencies and aspirations in American democracy.

L. P. F.

THOMPSON, CARL D. *Municipal Ownership*. Pp. xi, 114. Price, \$1.00. New York: B. W. Huebsch, 1917.

The chief contribution in this work is an adequate presentation of proof that regulation of public utilities is a complete failure and that private ownership of public utilities is the most important cause of corrupt government.

The author seems to err in the importance he attaches to increasing the wages paid to employes of municipally-owned public utilities. Fortunately, however, the advantages are not restricted to labor. He demonstrates that rates charged under municipal ownership succeeding private ownership of public utilities have been reduced materially. He stresses an important point when he says: "Municipal ownership should not be used as a means of making profit in order to reduce taxes." Mr. Thompson errs, too, in claiming that reducing the cost of water, gas, street car fares, and he adds, "even rents," will reduce the cost of living.

He sounds a soothing note to the present owners of public utilities in his statement: "Only those who are operating utilities stand to lose (under municipal ownership) . . . and this will be only a temporary loss that will more than be made up to them we verily believe in the vastly greater gains of the common good." It is impossible to agree with this view, and unnecessary in order to believe in municipal ownership and operation.

The most serious omission is the failure to discuss how municipalities are to secure the funds to acquire their public utilities.

BENJAMIN MARSH.

New York City.

SOCIOLOGY

ABBOTT, GRACE. *The Immigrant and the Community*. Pp. vii, 303. Price, \$1.50. New York: The Century Company, 1917.

The author, long Director of the Immigrants' Protective League in Chicago, has had intimate contact with various immigrant groups and thus writes from personal experience. Many have given us labored evidences of their prejudices, others, of their keen emotional bias. Miss Abbott has been able to put her evidence into readable form, to appeal to our common humanity and yet reveal that she is not blind to the problems involved.

Beginning with the journey to America the actual experiences of the incomers are related. Then we follow them through the mysteries of finding employment, the dangers of exploitation, and the special tribulations of the immigrant girls. Next we are shown the immigrant's relation to our social institutions, courts, industries, schools, politics. Everywhere actual cases are related giving a note of reality to the account. The volume closes with two rather unusual chapters on the Immigrant and American Internationalism, and the Immigrant's Place in a Social Program.

The volume is to be highly commended to all who are interested in immigration, and particularly to those who want to know the extent of our own failure to safeguard newcomers and help in their readjustment to our life.

C. K.

BOGEN, BORIS D. *Jewish Philanthropy*. Pp. xvii, 391. Price, \$2.00. New York: The Macmillan Company, 1917.

The author states in his preface that his work is intended to serve as a textbook for beginners, and as a ready resumé for those who are already engaged in the field. The content of the volume, however, reveals a most thorough, scholarly and up-to-the-minute study of Jewish methods of relief.

The first two chapters establish very clearly and fully the need for separate relief agencies by the Jews for the Jews. The third chapter presents in remarkably brief compass an illuminating history of charity among the Jews as practiced from Bible times to the present.

Beginning with chapter four, Dr. Bogen plunges right into present-day conditions with a description of the national organizations formed by the Jews for relief work. A strange omission here is his failure to speak of the work done by the Union of American Hebrew Congregations, though in a later chapter he refers briefly to its department of Synagogue and School Extension activities. The succeeding chapters deal with methods of fund-raising for Jewish philanthropic agencies, immigration, distribution, the "back to the soil" movement, resident-dependents, dependent women and children, insufficiency of income, a somewhat long-drawn-out investigation of the educational and social organizations, an excellent presentation of the subject of administration; and the closing section briefly considers the connection between the charity federation and the synagogue. A bibliography and index are appended. The title of the volume strikes one as inept.

Once in a while the author makes a sweeping statement without citing authorities. There are two serious drawbacks to the usefulness of the work. One is the constant use of Hebrew words, which are usually not translated or are mistranslated, as when on page 41 he uses the word "Kaddish" and in parenthesis has the word "prayer." It is doubtful if the average Jewish student who will use this book will understand the many Hebrew words that are in it; and of course the non-Jewish seeker after knowledge will be exasperated. Any future work of this character should have a glossary of such Hebrew words as part of its appendix. The other is the chapter on Standards of Relief, which ought to have been the most important, received the most scant attention.

But all in all, the book is a splendid piece of work.

ELI MAYER.

Philadelphia, Pa.

FERRI, ENRICO. *Criminal Sociology*. (Translated by J. I. Kelly and John Lisle, and edited by W. W. Smithers.) Pp. xlv, 577. Price, \$5.00. Boston: Little, Brown and Company, 1917.

The translation of Enrico Ferri's fifth (and latest) French edition of *Criminal Sociology* is the best contribution to the American literature of criminology yet

made in the series of translations of the American Institute of Criminal Law and Criminology. While the great work of Cesare Lombroso in the field of Criminal Anthropology laid the foundation, to the present writer belongs preëminently the credit for the founding of the Positive or Italian School of Criminology. Since 1897 English readers have had access to Morrison's abbreviated translation of the original work, but now for the first time they have presented to them the complete work revised by the author himself. The work consists first of a defense of the theory of Positivism applied to Criminality. The principle of causation which has revolutionized natural science turning alchemy into chemistry, astrology into astronomy, etc., has even more significant effects when applied to the phenomena of mind and of social life. Then follows a review and criticism of the data of criminal anthropology. While the author holds rigidly to the value of anthropological factors, his constant insistence upon the physical or telluric and the social factors makes the complete interpretation of crime thoroughgoing and rational. Those who so glibly characterize the Italian School as the anthropological school and criticize it for its one-sidedness reveal an unfamiliarity with the doctrines propounded by its founder.

Part III deals with the positive theory of penal responsibility. Here the old ethico-religious theory of moral responsibility is completely discarded for that of "social accountability" which is the natural outgrowth of the modern theory of social causation. The last part considers practical problems and shows what light the modern science of criminality throws upon the methods of dealing with criminals and the process of elimination of crime.

No one today can make a pretense of familiarity with the modern science of criminology who has not read this work. If criticisms are to be made of the Italian School, they should be made on the basis of the ideas here set forth. The American Institute has rendered a great service to English civilization by the translation of this book.

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SIMKHOVITCH, MARY KINGSBURY. *The City Worker's World*. Pp. 235. Price, \$1.25 New York: The Macmillan Company, 1917.

No civic leader could be better fitted to write of the life of the city worker than the author, who has lived many years in the heart of a great industrial section of New York City, as the moving spirit of Greenwich House. Mrs. Simkhovitch says that her purpose in writing the book is to furnish "a plain description of the facts of the city dweller's life"; and in a vivid and realistic way she has delineated the home of the worker, his problems of health, work, and recreation, and the maladjustments in family life due to poverty, ignorance, and poorly regulated industrial conditions.

But the book is more than description. The writer analyzes the evolutionary process going on in the city's heart. She indicates the changes that have taken place in the social environment of the worker and portrays the new home and neighborhood life that is developing as a consequence of those changes. The old home industries, the old kinds of pleasure, even the old forms of religion have been so modified that few of their original values remain; and with them have

passed away most of the old safeguards of family life. The main intent of the book is to show the process of readjustment, the search for new sanctions and safeguards, and to interpret the new family life and community relationships that are emerging.

Much of Mrs. Simkhovitch's own philosophy of life,—especially as it relates to the program of social reform,—is woven through the pages of the book; again and again her hatred of poverty and of all forms of social injustice is revealed. With deep faith in democracy she refers repeatedly to that newly discovered treasure house, the potentiality for group action for civic betterment that is slowly becoming articulate and effective in the industrial neighborhood.

The author has made conscious effort to write objectively of the life of her neighbors. There is no direct hint of the splendid work that she and her settlement family have been doing to develop group consciousness and independence among the neighbors. The book will be of special value to the increasing number of those interested in the exploration of the new paths of community development already being trod in city neighborhoods.

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SMITH, WALTER R. *An Introduction to Educational Sociology.* Pp. xvii, 412. Price, \$1.75. New York: Houghton, Mifflin Company, 1917.

This volume marks a new departure in educational theory and practice. It is quite inevitable that the growing discontent in the field of education should presently assume positive and constructive form, and the author has made the first conscious venture in this direction. As a textbook in educational sociology it will fill a much-needed place in the training of teachers in the broader aspects of the educational problem. Part I deals with the application of the general theory of sociology to education, and is intended to establish the social point of view. The reader is invited to survey the educational problem from the point of view of the primary social groups, such as the family, the play group, the community, the state and to discover in this way the need for a democratized education as distinguished from the individualistic education of the past. Part II is an attempt to make the applications which grow from such a survey to the method and content of education. The Social and Educational Survey, Social Factors in School Administration, the Socialization of Discipline, of the Program of Studies, Vocational Aspects of a Socialized Education, Vocational Guidance, Cultural Aspects of a Socialized Education, are among the subjects considered.

The first part dealing with sociological principles will hardly prove satisfactory to many sociologists because of its inadequacy rather than because of any inaccuracy, but as a beginning it justifies its existence and will no doubt point the way for a further development of the literature in this fruitful field. It ought to result in the organization of many classes in normal schools and colleges for teachers and in the formation of teachers' study clubs. For such purposes it will serve as an admirable introduction.

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**SOME COMMENTS REGARDING THE SEPTEMBER
1917 ISSUE OF THE ANNALS ON**

Justice Through Simplified Legal Procedure

This is a most valuable contribution to the discussion and solution of the subject of Simplified Legal Procedure—a subject which today is commanding as it should command the attention of all thinking men of the profession. After a careful perusal of all of the articles we think that every lawyer, legislator and layman could read and benefit the public. It would not only prove helpful to the individual but would be a most useful work of incalculable value.

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The volume is a collection of studies covering various topics in the present state of legal reform, but confined, for the most part, to the consideration of the organization of the courts and the rules governing practice before them. There are the outlines of the reader may be no specific questions of legal reform, he will find this volume both informative and inspiring. It is in every way a valuable contribution to the ever increasing body of literature upon the subject.

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I have read the last two issues of THE ANNALS (July, 1917 and September, 1917) with a great deal of interest and profit, particularly as the one just at hand (September, 1917). I think the subject matter has been treated in a most interesting way and the articles will do the membership a world of good. THE ANNALS is doing a valuable work, and its efforts will result in an incalculable benefit to the public.

A. B. CHIER, 125 Broadway, New York City.

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Modern Insurance Problems (March, 1917)

Stabilizing Industrial Employment (May, 1917)

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Financing the War (January, 1918)

Next Steps in Railroad Regulation (March, 1918)

These volumes will be ready for distribution on the 15th of January and March respectively.

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